a W. R. C. Smith publication

FIFTY CENTS

Textile Industries

Formerly "COTTON"

NOVEMBER, 1958

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University Microfilms
313 No First St
Ann Arbor Mich 4

Cibacron® Dyes

2 New Revolutionary Developments

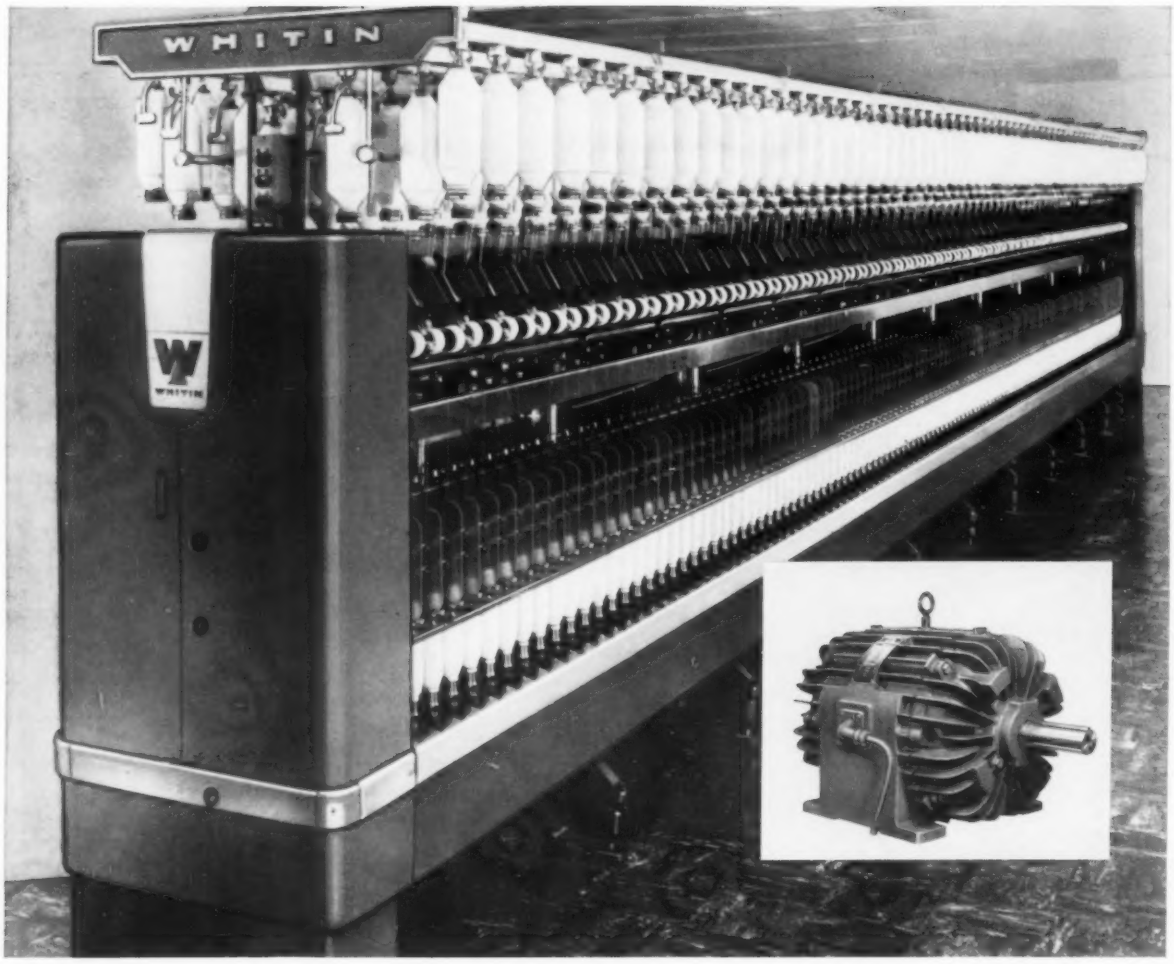
Emulsion Printing of CIBACRON Dyes on cellulosic fibers* using VISCOBOND** and Emulsifier SH† in place of the conventional gum system provides less color wash down, cleaner, sharper prints and higher color yield. In addition, good flow properties of print pastes permit higher speeds of printing.

*CIBA, STEIN HALL development
†Reg. U.S. Pat.
**Trade Mark Stein Hall

Dyeing of Wool with CIBACRON Dyes ...a simple procedure now makes it possible to produce on all forms of wool without chlorination the typically brilliant CIBACRON shades normally associated with cellulosic fibers. Leveiness is outstanding and the fastness is unobtainable with conventional wool dyes. In Vigoureux Printing, CIBACRON Black BG is fast to cross-dyeing.

CIBA

Also coming this month . . .
TI's Annual Product Parade & Buyer's Guide issue



AT WHITIN MACHINE WORKS

DIEHL* motors power new spinning frame

Described as "the world's most advanced spinning frame," the new "Piedmont" recently announced by Whitin Machine Works, Whitinsville, Massachusetts represents an investment of over a million dollars in research and tooling, and incorporates a score of innovations designed to achieve maximum operational efficiency and productivity in combination with attractiveness in appearance.

DIEHL engineers were called upon to work closely with WHITIN in the development of a motor drive that would exactly meet the requirements of this machine. The result . . . a motor of totally-enclosed design which provides extremely smooth start and smooth acceleration over its entire operating range, thus preventing yarn breakage. Despite its relatively small frame size, the motor has ample capacity to take care of various types of yarns and is equipped with thermal protection against possible excessive overloads. It has been accepted as standard equipment for the "Piedmont" Spinning Frame.

This is another example of DIEHL ability to work closely with machinery manufacturers in the development and manufacture of motors with the precise characteristics needed for efficient machine operation . . . an important reason for using DIEHL motors to power your equipment.

*Trademark of DIEHL MANUFACTURING COMPANY

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As an example, look what's happened to Single Stage bleaching processes. Over the years, Becco research has improved single stage bleaching to the point where it is in economical commercial use for both continuous and batch bleaching operations (J-box or kier).

In this connection, Becco has developed more efficient pretreatments, making possible substantial chemical cost savings when using a single H_2O_2 bleaching step.

Where production requirements, available equipment, or space limitations demand a single stage process, Becco can thus recommend the most efficient and economical procedures for you.

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NBP BPA

Textile Industries

Formerly "COTTON"

Vol. 122, No. 11
November 1958

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TIME SAVER for busy readers

Here is a summary of some of the major articles in this issue

Use it to organize your reading time most effectively

A special section on wash-and-wear 83-114

■ In a 32-page section written for this issue, TEXTILE INDUSTRIES presents a special report on wash-and-wear finishes, "a new dimension in textiles" (as the article beginning on page 84 terms them). The importance of wash-and-wear as a "new dimension" is pointed up by a recent survey, which showed that about 20 per cent of the 5.5 billion yards of woven cotton apparel fabrics produced in 1957 were given a resin finish.

Despite the rapidly growing importance of wash-and-wear, or perhaps because of it, there are large areas of disagreement among mill men, converters, garment manufacturers, retailers, and consumers as to when a fabric is wash-and-wear and when it isn't, how to decide whether it is or not, and what sacrifice of other desirable properties is necessary and worthwhile to achieve wash-and-wear.

The areas of disagreement are outlined, discussed, and possible solutions offered in three articles: "What Is Wash-and-Wear?" (page 86), by P. J. Fynn, research director for J. C. Penney Co., Inc.; "Wash-and-Wear: Progress and Problems," (page 90), by members of the staff at Southern Regional Research Laboratory; and "Wash-and-Wear: Past, Present, Future," (page 99), by Richard D. Wells and Francis K. Burr, of Fabric Research Laboratories, Inc.

A specific problem in the wash-and-wear field which has been little discussed elsewhere, "Wet Soiling of Resin-Treated Fabrics," (page 103), is thoroughly examined by D. D. Gagliardi and F. B. Shippee of Gagliardi Research Corp., who report on some of the research done in their laboratories.

The special section also contains reports on an "Efficient Layout for Resin Finishing" (page 108), and "How Bradford Controls Wash-and-Wear," (page 110), by a member of the staff of TEXTILE INDUSTRIES.

Make customer complaints pay off 115

■ Complaints from customers can be an asset to a mill, if they are used as the basis for a continuing campaign to keep faulty products from reaching the market. And it is wise to encourage complaints, so that the cause can be eliminated—for every customer who complains, there may be many who just stop using the product.

Evenness charts make effective training aids 118

■ One southern cotton mill uses an evenness tester in its training program for employees. Graphs from the tester are posted in the department concerned, with an explanation of what they mean.

The author gives examples of how evenness charts were used in training drawing frame and card operatives.

Trouble shooting box looms 121

■ Six of the most frequent causes for flagging box looms are discussed by an experienced loom fixer, and points to check when a loom is flagged are listed.

A look inside spinning drafting 123

■ This discussion of the components of drafting elements on spinning frames includes some things that were learned from research into roll weighting, slippage, and static.

Why industrial engineering? 127

■ When a textile mill employee asks this question, he's entitled to an answer that he can understand.

This is the way that Frank Sherrill, industrial engineer at Joanna Cotton Mills Co., Joanna, S. C., answered the questions of two typical employees at his mill. Other mills should find the method useful in selling their employees on the importance of time studies and other techniques used in work measurement.

The goal of quality control—no seconds 131

■ ". . . We have rated our quality, we have found out where the poor quality is coming from, and we have taken steps to correct it. However, the ideal situation is not to have this poor quality to start with. How are we to prevent these things . . . ?"

The answer which Exposition Cotton Mills Co., Atlanta, Ga. found, is described by the mills' assistant superintendent, George Malone.

Face-to-face carpet output tripled 138

■ High speed, close pile control, and accurate cutting are some of the features of the looms which enabled Carpet Trades, Ltd., Kidderminster, England, to triple output of Wilton carpets woven face-to-face.

COMING LATER THIS MONTH

■ About the middle of November, you will receive your copy of TI's Annual Product Parade and Buyer's Guide. This extra, triple-barrelled issue contains a description of each of the major new products introduced to the textile industry during the past year, a list of booklets and other product information which you may obtain at no cost, and a comprehensive directory of suppliers to the textile industry—all conveniently classified according to mill department.

COMING NEXT MONTH

■ In the December issue of TI, our European correspondent will give a report on what was new at the International Textile Machinery Exhibition, held recently at Manchester, England. Also in December: more on wash-and-wear, a report on insect-proofing wool with EQ-53, what to do in slashing to keep shedding at a minimum, how statistics can save $$ for you, and a controversial article on knitting machine speeds. And, of course, much more.

TEXTILE INDUSTRIES is indexed in the "Applied Science & Technology Index"

TEXTILE INDUSTRIES is published monthly, with an extra issue in November, at 116 E. Crawford St., Dalton, Ga., by W. R. C. Smith Publishing Company, Dalton and Atlanta, Ga., U. S. A. Contents copyright 1958 by W. R. C. Smith Publishing Co. W. J. Rooks, chairman of the board; R. P. Smith, president. Executive and Editorial Offices: 806 Peachtree St., N. E., Atlanta 8, Ga. Subscription Rates: United States and Possessions, $2.00 for one year; Canada, South America, Central America, $2.00 per year; Foreign Countries, $5.00 per year. Entered as second-class matter at the post office, Dalton, Georgia, under the Act of March 3, 1879. Postmaster, send notices by Form 3579 to 806 Peachtree St., N. E., Atlanta 8, Ga.

Photo courtesy Princeton Knitting Mills, Inc., New York, N. Y.

How's this "fur" ingenuity?

Man-made mink is just one of several successful products now made from deep pile fabrics by a leading manufacturer. The reasons for his success are two: First is the long, luxurious, cut-pile of soft, but sturdy, synthetic fibers. And second is the *back-size*, based on a combination of CHEMIGUM LATEX and PLIOVIC LATEX.

The latex backing is important because it provides essential body, pile lock, dimensional stability, flexibility and resistance to raveling. CHEMIGUM LATEX is used because it imparts these properties on a long-term basis, thanks to its excellent resistance to dry cleaning and aging. PLIOVIC LATEX—a vinyl latex—is used, primarily, to control the "hand" of the fabric.

If you are interested in making a pile fabric of outstanding quality, be sure you have the full story on both CHEMIGUM LATEX and PLIOVIC LATEX in back-sizes. It's yours for the asking, including the latest *Tech Book Bulletins*. Write to Goodyear, Chemical Division, Dept. W-9439, Akron 16, Ohio.

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60 YEARS

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Ideal Modernized Drawing

- **First in High Speed**
- **First in Quality**
- **First in Economy**
- **First in Versatility**

Compare 1948 drawing with today's. The changes have been revolutionary. With few exceptions *every improvement in drawing frames has been pioneered by Ideal.* Today's new Ideal Frames are way out in front in production, in sliver quality, and in operating economy.

- **First in High Speed** Ten years ago 110 feet per minute was a satisfactory speed. Ideal's revolutionary construction stepped this up to 200 feet . . . then 250 . . . 300 . . . 350 . . . and now Ideal Drawing is producing sliver of unsurpassed quality at over 400 feet *in normal consistent operation.* This means 366% of 1948 production, due to Ideal's engineering leadership.
- **First in Quality** Ideal patent ball bearing spacer sections* eliminate cutting and bruising of fibers and automatically even out thick and thin places in the sliver. Ideal's exclusive flute construction imparts a permanent strength-increasing crimp to the fibers. Ball bearing construction eliminates oil spots. Ideal's Vacuum System** keeps the fiber cleaner. And Ideal's ability to produce stretch-out blends has greatly improved the quality of blended yarns.
- **First in Economy** Ideal Drawing Frames require fewer adjustments, less maintenance, less power and fewer replacements. High production and extremely compact construction saves floor space. Per pound of sliver, the New Ideal Drawing Frame is your most economical drawing.
- **First in Versatility** Ideal Drawing was the first to draw coarse counts, fine counts, synthetics, and blends with equal efficiency.

We confidently believe that the New Ideal Drawing Frame is the finest on the market. Let us discuss it and demonstrate it to you before you buy *any* new drawing.

***Patented **Pat. Pending**

Ideal Industries, Inc.
Bessemer City, N. C.

AUTOMATIC CLEANING where overhead track brings full air sweep of loom cleaner to every loom on the floor, without disrupting loom operation, keeping looms free of accumulated waste.

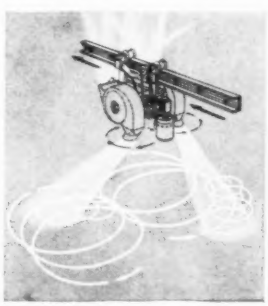
KEEPS LOOMS CLEAN . . . WITH NO DOWNTIME

In mills where Amco Heliclone Loom Cleaners have been installed, new high-quality production standards are being established.

The swiftly whirling outlet nozzles, driven by powerful air streams, direct high velocity jets of air in overlapping, circular paths resulting in a rapid series of sharp puffs over loom and warp surfaces. At the same time, supplementary air outlets clean overhead track and ceiling.

Automatic cleaning with Heliclones largely eliminates end runs and floats, waste bunches, end breakage, overshots, broken picks, and oil spots caused by loose accumulated waste. Of course, it completely eliminates the old-fashioned method of manual cleaning, which is a constant source of accidents and cloth imperfections, and is so costly in terms of labor and downtime.

Amco Heliclone Loom Cleaners may be used for the automatic cleaning of practically *all* makes and types of looms. A unit similar to the Heliclone is also available for winder cleaning. Write American Moistening Company for further facts.



- Keeps looms and ceiling free of accumulated waste
- Cuts loom cleaning and costly downtime
- Improves production and quality of fabric
- Reduces fire hazard
- Improves weave room appearance
- Can be used with beam handling equipment

AMCO HELICLONE® LOOM CLEANER

Pat. Pend.

AMERICAN MOISTENING COMPANY

Since 1888

Makers of Air Conditioning Systems and Textile Mill Equipment

Home Office and Plant: Cleveland, N. C. — Branches in Atlanta, Providence, Toronto

Booth
Originators of SUPR-O-TAPE • SUPR-O-BAND • STRIP-O-MATIC • MICR-O-GRIND
MANUFACTURERS OF QUALITY CARD CLOTHING SINCE 1892

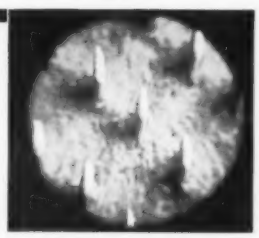
REDUCE YOUR NEP COUNT!
WITH
MICR-O-GRIND*
CARD CLOTHING
*Pat. Pending

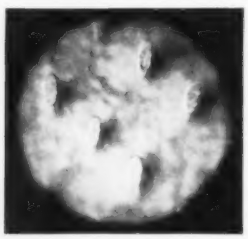
MILL TESTS SHOW:

Nep count reduced 40%
Blending improved substantially
Yarn strength up 10%
Grinding 80% less frequent
Grinding time less than 30 minutes (normal 6-8 hours)
Stripping 65% less frequent

Booth card clothing may now be obtained with a **new and exclusive** extra sharp needle point. With your first purchase of this new clothing, the MICR-O-GRIND head is available for rent so that you can regrind it yourself.

Note needle point from MICR-O-GRIND (left) compared with conventional flat point (right). Extra sharp MICR-O-GRIND points card out the neps and reduce the nep count as much as 40% on cotton. Sharper points also allow stock to release itself—hence less loading—and also give greatly improved carding action. Stripping of cotton cards only once a shift—on woolen cards as little as once a month.





Grinding discs are spiraled to take off the heel of each tooth. MICR-O-GRIND head fits your conventional grinding shaft.

HOW IT WORKS

MICR-O-GRIND card clothing is ground with spiral abrasive discs that take the heel off the wire. Accuracy of initial grind is assured by exclusive Booth electronic monitor controls. This leaves a needle-like point, long recognized as ideal for card clothing. *Never before has this ideal been attained.* Conventional grinding invariably leaves a flat point because no way was known to grind the teeth to a perfect point.

IMPROVED QUALITY

The needle point of the teeth holds the fibres long enough to be thoroughly carded and yet does not tear the fibres. This provides a more gentle combing action for increased yarn strength, better blending and reduces neps by as much as 40% in cotton carding.

Needle point is smooth enough to release the stock easily, yet the fine serrations (as seen under a microscope) will not let the fibres escape without being carded. This also means that there is less beating action at the doffer comb as the web flows more readily off the card.

REDUCED COSTS

through reduced Down Time for grinding and stripping. MICR-O-GRIND clothing is very inexpensive—only 5% more. The MICR-O-GRIND needle point can be applied to any type of card clothing—the only difference is the point. In a cotton mill, you can get your standard 100's, 110's, etc., in either CCWC, CWC or rubberfaced foundation—also any woolen clothing.

BENJAMIN BOOTH COMPANY

ALLEGHENY & JANNEY STS., PHILA. 34, PA.
SALES OFFICES: *West Point, Ga. • Charlotte, N. C. • Lowell, Mass.*

Booth

by J. C. C.

BANG! BANG!

Two shots rang out in the stillness of the Western afternoon. One man, a killer, crumpled to the ground, dropping a blazing gun, while our bronzed hero stalked across the dusty area, a gleam in his eye—of satisfaction with a job well done. We got you, Pardner. If that doesn't get you, here's another

BANG!

You see, it isn't July 4th—it's actually Thanksgiving. And before we forget it, thank you, all readers and advertisers, for your continued support of TI—you know T.I.D.E (TEXTILE INDUSTRIES Does Everything).

► The reason for all of the fireworks above is not to celebrate anything; but, you see, TI is making some editorial readership studies, and it looks like we're going to have to do something to wake up our readers of S&R. Everything on TV seems to be Westerns, and they have all kinds of Western surveys. So, maybe we should do a Western every month.

Any ideas for improving S&R? You know—brightening it up—getting more readers?

We know we used to have a couple of readers: **P. J. Wood** of Royce Chemical Co. and **Watson Wood** of Knitters, Ltd., in Lindsay, Ont., Can. But then maybe we got lost in the Woods, and maybe that's what's wrong with this here column—no humor, no excitement, not many sexy pictures.

Just letters and pictures of folks reading reprints from our pages like

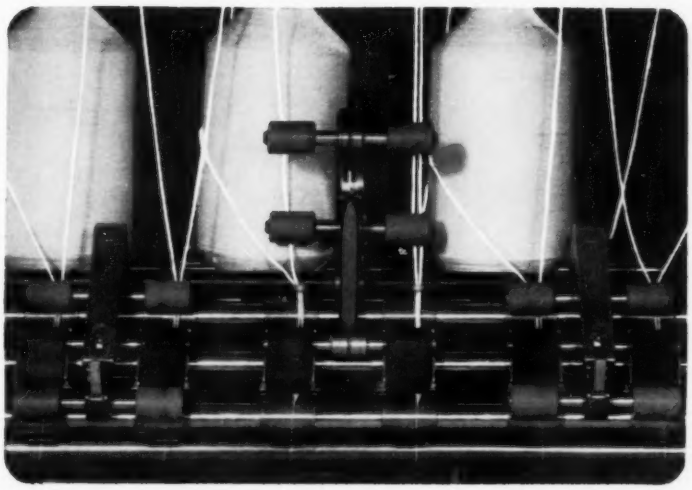
L. A. Fiori (left) of USDA's Southern Regional Research Laboratory, New

(Continued on page 16)

THE MOST SENSIBLE ANSWER TO GADGET-FREE TOP ROLL SUSPENSION

ROBERTS *PosiWate* SUSPENSION SYSTEM

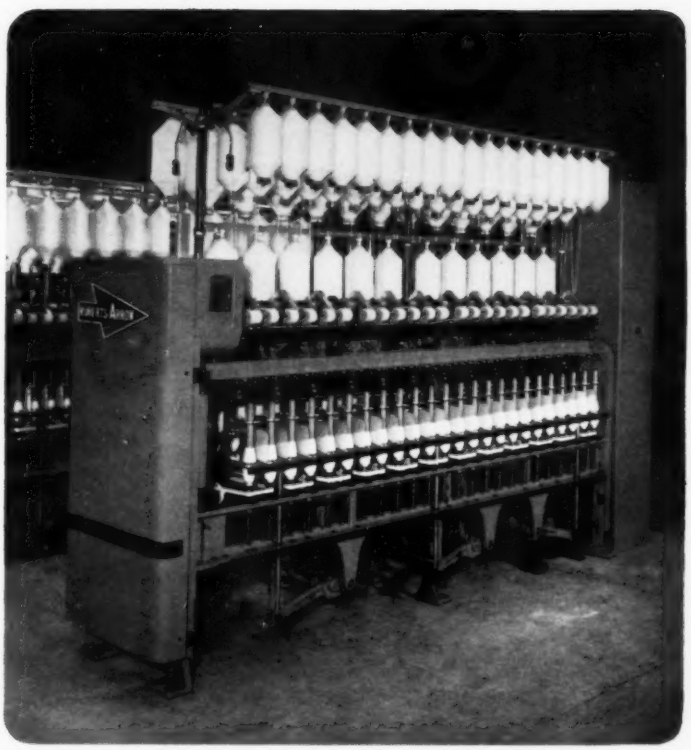
Elegantly simple, the Roberts PosiWate Top Roll Suspension System is completely free of hooks, unpredictable short springs and other gadgets. PosiWate recovers the best features of positive weighting and weight distribution used and proven in several million spindles insuring uniform performance from spindle to spindle.



A FEATURE OF

ROBERTS ARROW

ALSO AVAILABLE AS CHANGE-OVER MODERNIZATION ON ANY MAKE OF FRAME



Very Advanced

ARROW SPINNING features:

- PosiWate Top Roll Suspension
- UnaRing Balloon Control
- EvenGrip Fluted Bottom Rolls
- Roberts Ball Bearing Spindles
- Double-Apron High Draft System
- UnitVac Power-Suction Cleaning
- Roberts All-Ball-Bearing Head
- UniTized Sectional Frame
- AeroCreel with Latch-Type Bobbin Holders
- Flexibility For Cotton And Synthetics

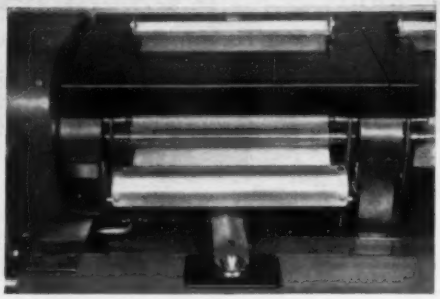
ROBERTS COMPANY
SANFORD, NORTH CAROLINA

For further information use Handy Return Card, Page 199

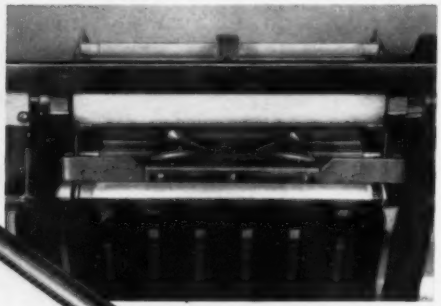
NOW — pick clearers only at the doff!!

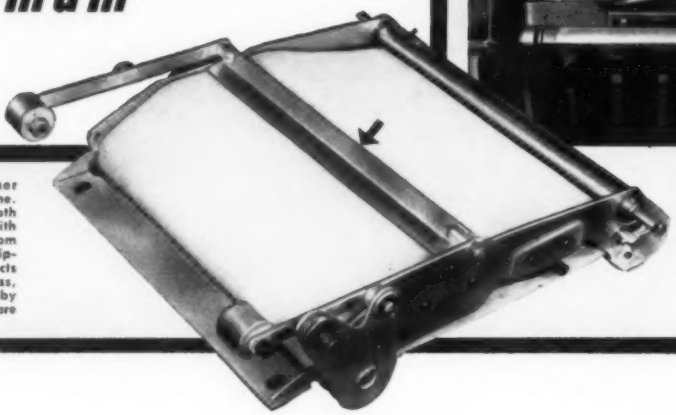
NEW SACO-LOWELL SELF CLEANING UNDERCLEARER

Reduces picking to a minimum



New Automatic Self-Cleaning Underclearer open to show clearer surface. Note the neat, compact design.





Self-Cleaning Underclearer demounted from the frame. The loose-fitting felt cloth is in constant contact with the surface of the bottom rolls. The oscillating stripping comb (arrow) collects the waste in a loose mass, which is easily removed by operator as full cans are doffed.

As an extra aid in reducing sliver variation, a new sliver pan is attached in such a manner that the distance from the nip of the back rolls to the pan remains the same, regardless of changes in roll setting.

Wth mills everywhere facing increased cleaning and picking costs due to the sub-standard 1957 cotton crops, Saco Lowell Research has developed this new self cleaning underclearer assembly which can be applied to both 16" and 18" conventional Saco Lowell Drawing Frames. This time and labor saving changeover cuts opeating costs and improves sliver quality. In addition to eliminating picking except at the doff it offers these 4 advantages:

1. ***Continuous apron keeps roll surfaces clean and lint free.***
2. ***Keeps sliver free of slubs.***
3. ***Apron surface is kept clean by oscillating stripping comb.***
4. ***New sliver pan reduces sliver variation.***

Enjoy substantial savings in your drawing operation with this NEW SACO LOWELL CHANGEOVER. Call or write the nearest Saco-Lowell Sales Office for complete information.

SACO-LOWELL SHOPS

60 BATTERYMARCH STREET, BOSTON 10, MASS.

Shops at BIDDEFORD & SACO, MAINE; SANFORD, N.C.; EASLEY, S.C. Sales Offices: CHARLOTTE · GREENSBORO · GREENVILLE · ATLANTA

When you see the Mutual trademark on the chromium chemicals you buy, you can be assured that you will get uniform quality and prompt delivery.

It means the product in the package has, in back of it, the knowledge and skill that America's first producer of chromium chemicals has acquired during the more than 100 years continuous production.

It means you can expect rapid delivery from strategically located warehouses—and you can choose from a variety of types and sizes of packages.

Send for this bulletin. It contains information on the full line of Mutual Chromium Chemicals.

Mutual chromium chemicals

Sodium Bichromate
Sodium Chromate
Chromic Acid
Potassium Bichromate
Potassium Chromate
Ammonium Bichromate
Koreon (one-bath chrome tan)

SOLVAY PROCESS DIVISION
61 Broadway, New York 6, N. Y.

Allied Chemical

MUTUAL chromium chemicals are available through dealers and SOLVAY branch offices located in major centers from coast to coast.

Solvay Process Division
Allied Chemical Corporation
61 Broadway, New York 6, N. Y. Dept. 25-11

Please send me Bulletin #52—"Chromium Chemicals."

NAME_____ TITLE_____

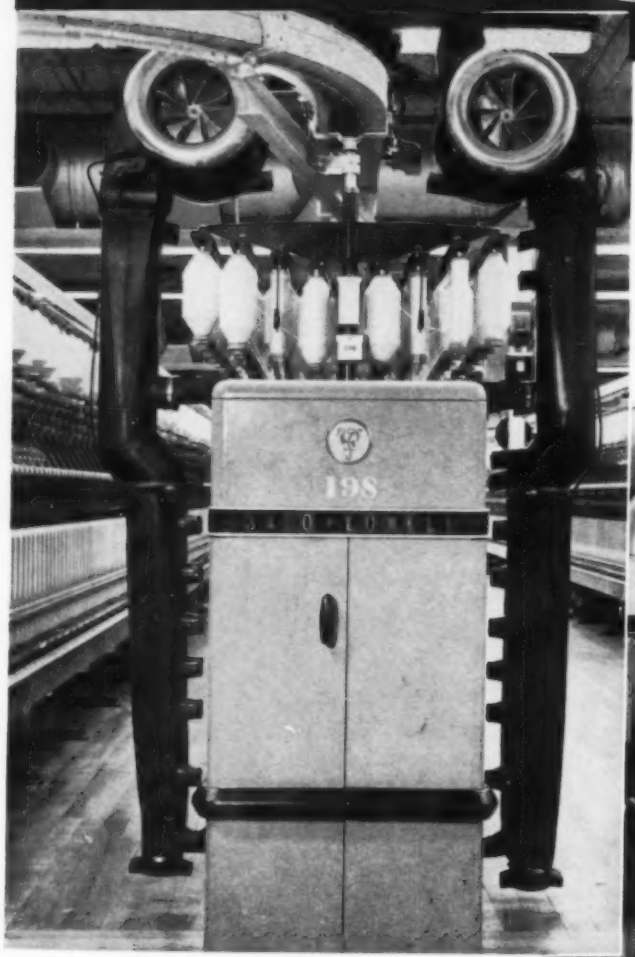
COMPANY_____

STREET_____

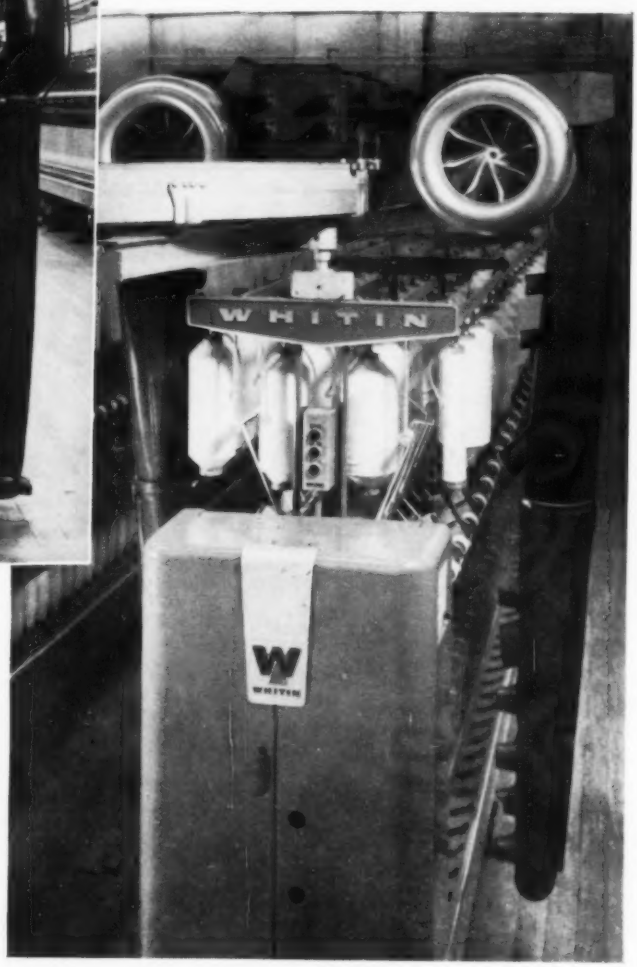
CITY_____ ZONE____ STATE_____

Bahnson AIR-O-MATION FOR

The most modern frames
with
The most modern cleaner



Bahnson Cross-Jet Cleaner
Installed on Gwaltney Frame



Bahnson Cross-Jet Cleaner
Installed on Piedmont Frame

THE *Bahnson*

CROSS-JET CLEANER

CLEANS MORE FRAMES, MORE AREA, MORE OFTEN

You get maximum advantages for frame and room cleaning

- Four fans incorporated into one compact unit
- Dual nozzles provide 180 degree overhead cleaning
- Multiple outlets for creel, drafting system, and frame
- Flexible extended nozzles with automatic stop-and-go control
- High air handling capacity—adjustable for your needs
- Automatic fan shut-off for any desired track section

You get extra value with superior features

- Operates on creel or ceiling supported track
- Individual motors with overload protection and indicator lights
- Electrically operated for trouble-free performance
- Balanced low-silhouette requiring minimum overhead clearance
- Low center of gravity for maximum travel stability
- Heavy duty track for maximum life

Let a Bahnson representative analyze your cleaning problems and explain the benefits of the Bahnson Cross-Jet Cleaner for your requirements. There's no obligation. *Write Bahnson today!*

Bahnson AIR-O-MATION

Air at Work for Increased Profits

THE BAHNSON COMPANY
WINSTON-SALEM, N. C., U.S.A.

Now for textile mills—a new product to help insure that

NEW GULFCROWN

Here's a completely new multi-purpose, heavy duty, lithium base grease for extreme pressure applications . . . ideally suited for the lubrication of bearings, cams, pick balls and gears in textile looms.

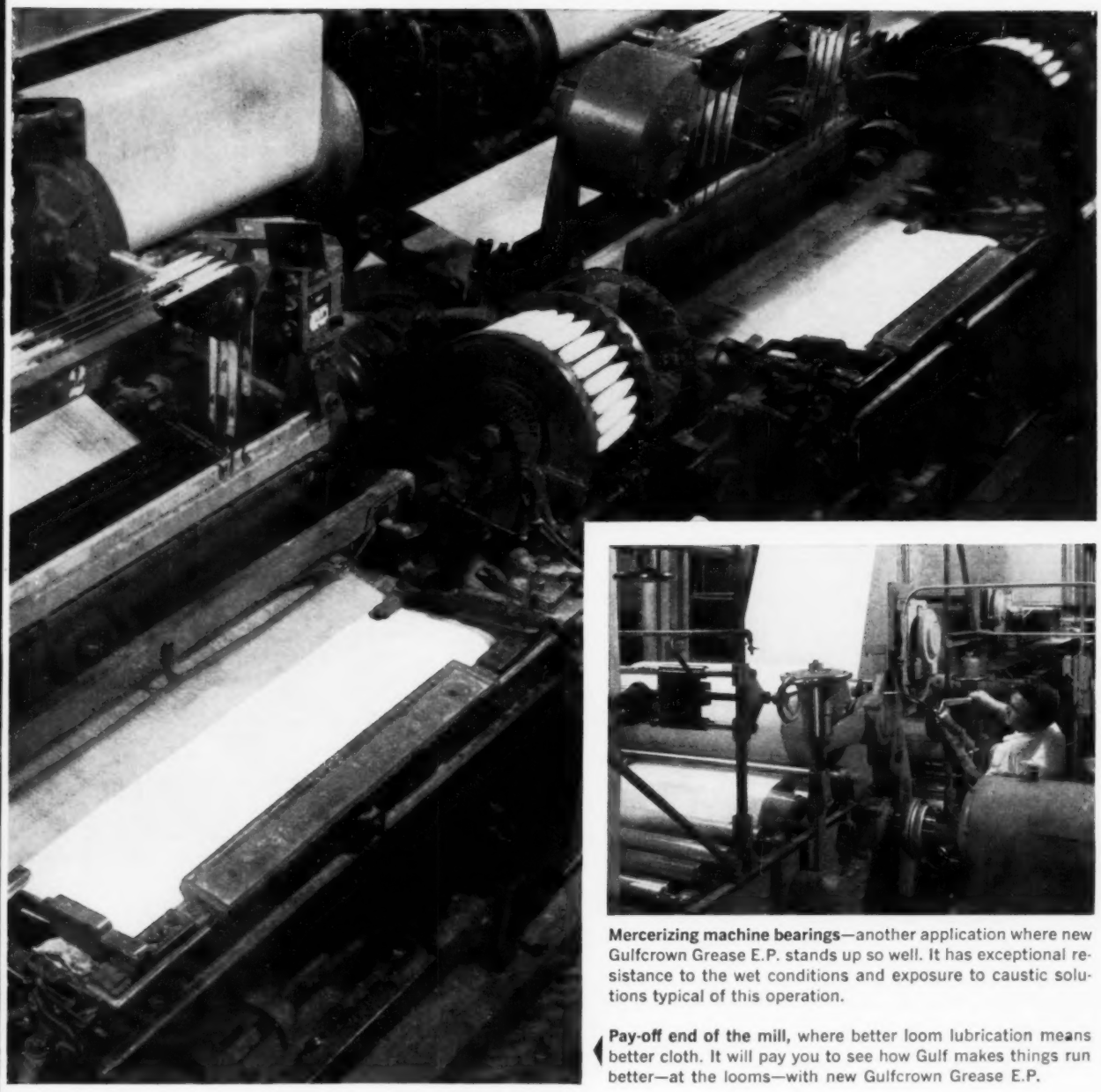
Suited for nearly every type of grease application

Although this new grease is made to withstand high loads, shock loads and oscillating action, it performs excellently in practically any grease application . . . including electric motor bearings, fan and pump bearings.

New Gulfcrown E.P. resists heat, cold, moisture and mechanical breakdown. It has excellent oxidation stability and protects against corrosion. Pumps freely at zero Fahrenheit, yet stands up at temperatures up to 250°F. and higher, under certain conditions.

Lets you use less grease—and lubricate less often

In loom lubrication, new Gulfcrown Grease E.P. No. 2 permits a reduction in the amount of grease used—and



Mercerizing machine bearings—another application where new Gulfcrown Grease E.P. stands up so well. It has exceptional resistance to the wet conditions and exposure to caustic solutions typical of this operation.

Pay-off end of the mill, where better loom lubrication means better cloth. It will pay you to see how Gulf makes things run better—at the looms—with new Gulfcrown Grease E.P.

Gulf makes things run better!

GREASE E.P.

an increase in the period between applications as compared with conventional loom lubricants.

This new grease is now available in three N.L.G.I. consistencies: Nos. 0, 1, and 2. Gulfcrown E.P. No. 2 is the recommended grade for loom lubrication.

Find out how new Gulfcrown E.P. can improve your operation and help you lower maintenance costs. Just call your Gulf Sales Representative at the nearest Gulf office. Meanwhile, mail coupon for booklet.

GULF OIL CORPORATION
Dept. DM, Gulf Building
Pittsburgh 30, Pa.

Please send free booklet on new Gulfcrown Grease E.P.

Name_____

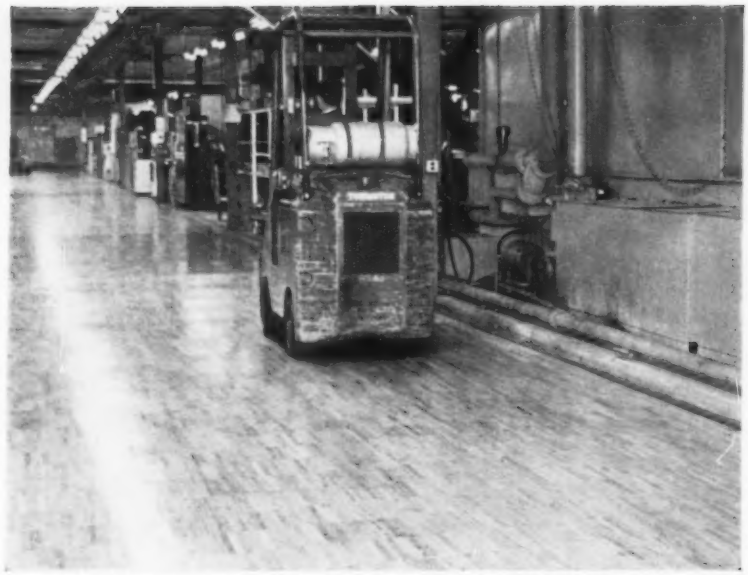
Title_____

Company_____

Address_____

City_____ Zone____ State_____

GULF



HEAVY-TRAFFIC AISLE sealed with Tennant No. 15 stays bright and durable.

NEW! **TENNANT No. 15 Heavy-Duty Floor Seal... has TWICE the life of other heavy-duty seals**

With at least twice the life of other top-quality floor seals, TENNANT No. 15 Heavy-Duty Floor Seal is in a class by itself!

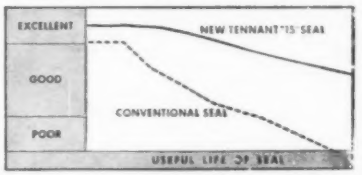
Attractive, easy to use, and built to take punishing traffic, it's the TENNANT SYSTEM's answer to rising textile floor care costs.

Stays bright, durable. Outwears any comparable material we know of at least 2 to 1. Does not darken with age. Resists dirt, abrasion, rubber burns, moisture, etc.

Dries fast; easy to use. Under most conditions you put first coat down at 4 pm; have the third coat traffic-ready by morning. No separate primer needed—it's both a seal and a finish.

Cuts floor care costs. Has no equal for long life; saves many gallons of seal yearly. Easy to clean; saves labor. For use on *both wood and concrete.*

WRITE TODAY *for details on this amazing new Tennant System discovery —and its value to your mill.* G. H. Tennant Company, [illegible] N. Lilac Drive, Minneapolis 22, Minnesota.



Graph above shows comparative rating based on wear, color, gloss and other vital characteristics. Note sustained performance of Tennant No. 15.

TENNANT

The Textile Industry's Most Widely Used

FLOOR MAINTENANCE SYSTEM

Methods

Machines

Materials

FLOOR MAINTENANCE SYSTEMS

Shorts and Remnants

(Continued from page 8)

Orleans, and **S. M. Mather,** Bonds Industries, Ltd., Camperdown, Australia, who are studying a TI article on the SRRL Cotton Opener.

And speaking of the SRRL Opener, "Will you send us more information on SRRL Opener. We are manufacturing 10s to 42s cotton yarns using ¾" to 1 1/16" staple cotton, chiefly from America, Brazil, East Africa, and Pakistan. From our products, it appears to us that our present opening and cleaning line has not removed sufficiently enough amount of foreign matters. Therefore, we are thinking of remodeling or expanding our opening and cleaning arrangement if necessary. . . . "

ROBERT YUNG
South Textiles Ltd.
Hong Kong

Now, old S&R doesn't know whether we still have more of that SRRL opener reprint around, but since its Thanksgiving and we are in such good spirits maybe we should offer some more reprints free. That might help get some more attention. In the accompanying box are titles of a few that we have on hand. Just

(Continued on page 20)

FREE REPRINTS

Editors, TEXTILE INDUSTRIES
806 Peachtree St., N. E.
Atlanta 8, Ga.

Send reprints checked below to:
Name .....
Position .....
Mill .....
Address .....
City..... Zone..... State.....

- .....**Nep Literature Reviewed**
- .....**Joanna Reduced Waste**
- .....**Spinning Fur Blends on the Cotton System**
- .....**Huntsville's Vibration Problem Solved**
- .....**Dusting Cotton Bales as a Fire Control Measure**
- .....**Core Testing Wool**
- .....**Waste Reduction and Control**
- .....**The Marvel Mending Method for F-F Hosiery**
- .....**They Are Watching You (quality control)**
- .....**Lubrication of Slashers**
- .....**Correcting Range Values on the Uster Tester**
- .....**New Textile Fibers Created (Cyanoethylation)**

Colors come to life with National® Dyes!

Colors that *live* are colors that *sell!*

To help you bring colors to life, we supply a diversified range of carefully standardized dyes for all fibers . . . plus the well-qualified assistance of experienced technical men and conveniently located service laboratories . . . plus basic research to develop new dyes and constantly improve the properties of established lines.

These essential services are part of the bonus you enjoy when you do business with National Aniline.

NATIONAL ANILINE DIVISION

40 RECTOR STREET, NEW YORK 6, N. Y.

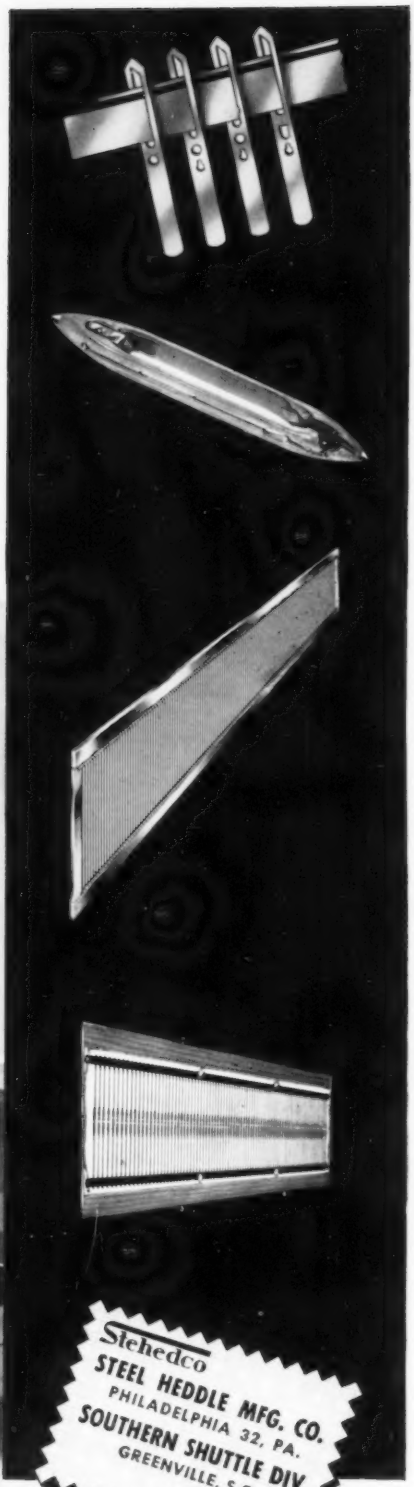
Akron Atlanta Boston Charlotte Chattanooga Chicago Greensboro Los Angeles
New Orleans Philadelphia Portland, Ore. Providence San Francisco

Allied Chemical

Stehedco

Products are essential to Quality Fabrics

They can be depended upon to make
your job easier and give longer,
trouble-free service . . . more economically.
The proof of Stehedco Quality
is in the woven cloth.
Ask to have one of our qualified
Sales Engineers show you how to get the most
satisfaction from Stehedco Products.

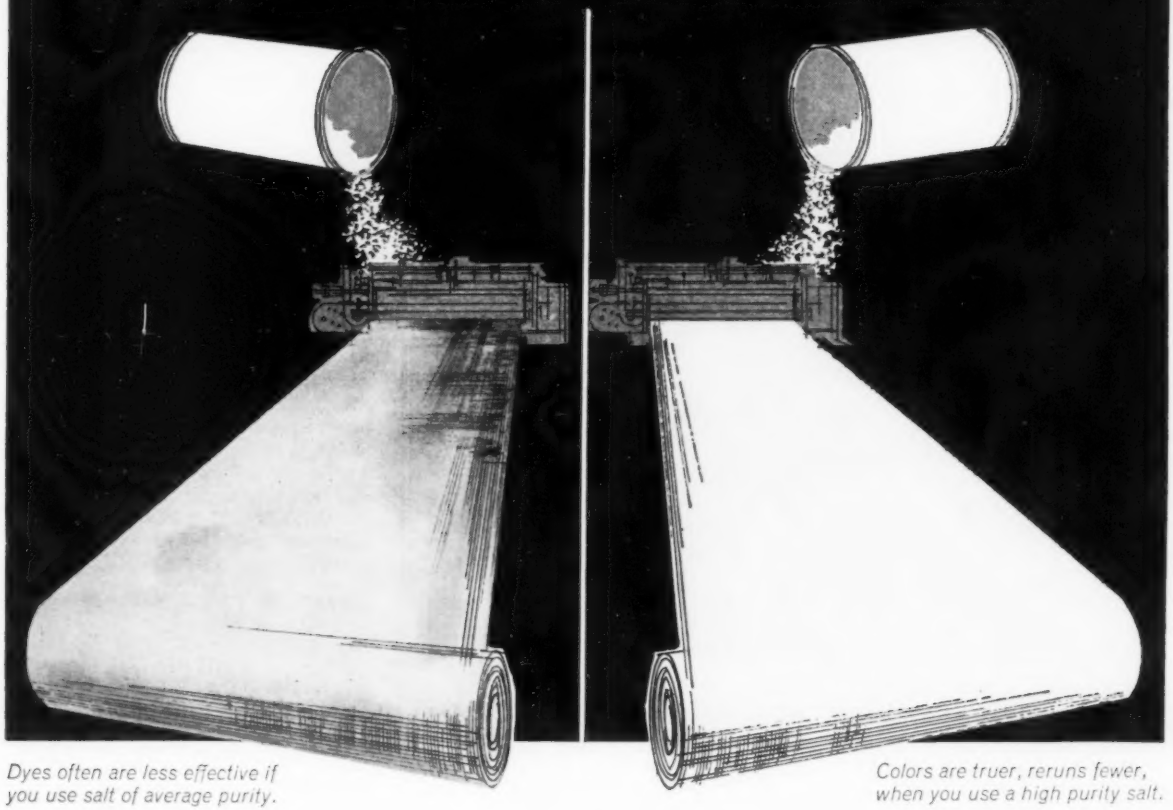


Stehedco
STEEL HEDDLE MFG. CO.
PHILADELPHIA 32, PA.
SOUTHERN SHUTTLE DIV.
GREENVILLE, S.C.
Southern

K-5710

Other Plants and Offices: Granby, Quebec, Canada • Lawrence, Mass. • Greensboro, N.C. •
Atlanta, Ga. • Textile Supply Co., Dallas, Texas • Albert R. Breen, Chicago, Ill.

Let your dyes do the job the manufacturer intended!



Dyes often are less effective if you use salt of average purity.

Colors are truer, reruns fewer, when you use a high purity salt.

Use Morton Chemical Grade 999 Salt

Morton Chemical Grade 999 is the all sodium salt (sodium chloride and a trace of sodium sulphate) that many dye manufacturers use in testing their dyes. When you use Morton Chemical Grade 999 Salt in your operation, it complements your dyes . . . makes them more effective, and helps you get softer finishes, more even shades, and greater color intensity.

And no wonder! Morton Chemical Grade 999 is more than 99.9% pure sodium chloride. It is a low cost, high purity evaporated salt free from objectionable calcium and magnesium compounds that may precipitate or react with dyes to reduce their effectiveness.

Available in 100-lb. bags or bulk, Chemical Grade 999 is recommended for use **whenever commercial calcium-free salt is required.** It's specifically recommended when direct salting is used in dyeing rawstock, package, beam, beck or jig with either sulphur, direct, or naphthol dyes.

☐ *Please send me more information about Morton Chemical Grade 999 Salt.*

☐ *I would also like to know how much I can reduce calcium and magnesium content by using Morton Chemical Grade 999 Salt. Please have a Morton Brine Engineer arrange a mutually convenient time to discuss the benefits of using Chemical Grade 999 Salt.*

Name _____ (Please print)

Title _____

Company _____

Street _____

City _____ Zone ____ State _____

MORTON SALT COMPANY

INDUSTRIAL DIVISION

Dept. TI-11-58, 120 So. LaSalle Street, Chicago 3, Illinois

OUTSTANDING SUPERIORITY OF SOUTHERN STATES COMB BOXES PROVED IN NATION'S MILLS

More than 45,000 Southern States Comb Boxes have been placed in service during the past 10 years—equal to 50% of all the nation's cotton cards. Many mills have changed over 100%.

This overwhelming acceptance proves conclusively that mills can easily justify the small investment. Cardroom overseers quickly recognize the savings that result from their use: no oiling, cleaning or maintenance for the life of the unit; steady, even strokes to drive the comb with perfection; elimination of hot-running, leaky, rattling old-style boxes and their headaches.

Southern States Comb Boxes are furnished complete with an adjuster base for mounting on any make of cotton card. Bases are double tapped to permit rapid mounting on either right or left hand cards. Installation is quick and easy.

Let us show you with facts and figures how it has paid hundreds of mills to install Southern States ball-bearing, sealed-for-life, Comb Boxes; prove how much they will save you in one year. Write direct for a representative to call at your convenience.

SOUTHERN STATES
EQUIPMENT CORP.
HAMPTON, GEORGIA

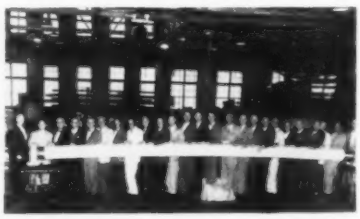
Shorts and Remnants

(Continued from page 16)

check the ones you would like to have, fill in your name and address in the space provided, clip and mail to The Editors at the address shown.

► But why do we worry about readers when we have such good inquiries as that one recently received from **M. A. Perrigo,** partner, Hi-Fi Songs, Northridge, Cal. So if some hit comes up going like "Calico, Calico," or the "Purple People Wig," or "Hair Today, Dynel Tomorrow" like the news item from Union Carbide which says that American beauty "know-how" has pulled the skids from under the high priced Parisian wig market with such as below, as you see you can save on Fitch's and remedies for falling hair and baldness. Just get dynel and look like this (wonder how Kremel works on this?):

► Get out your magnifying glass for the annual sales meeting of Mount Hope Machinery Co. reps pictured here in front of a huge "Free Wheeling" expander. Either too many reps



or not enough expander as **Wm. L. Galahue,** Gen. Sales Mgr. (extreme left) didn't quite make it.

50 Years Ago

Since we trotted out some 1915 items on the first Southern Textile Exposition last month, old S&R got to looking back a few years more to 1908 when TI (then "Cotton") merged with "Southern Mills" of Greensboro, N. C., and Henry Kittredge, Ed., said:

". . . the financial disturbances which have agitated the commercial and industrial world the past year will, in time, if not shortly, be supplanted by a sound and

healthy condition of trade activities, stimulated by a return of confidence in the integrity of business affairs."

He was right, too.

Tariff questions were in the forefront of the news, then as now.

The National Association of Hosiery Manufacturers asked that German-American tariff agreement be abrogated. It was hurting business, said NAHM.

The Editor predicted that sulfur dyes would replace cutch. He was right again.

20s single skeins were selling at 16¢.

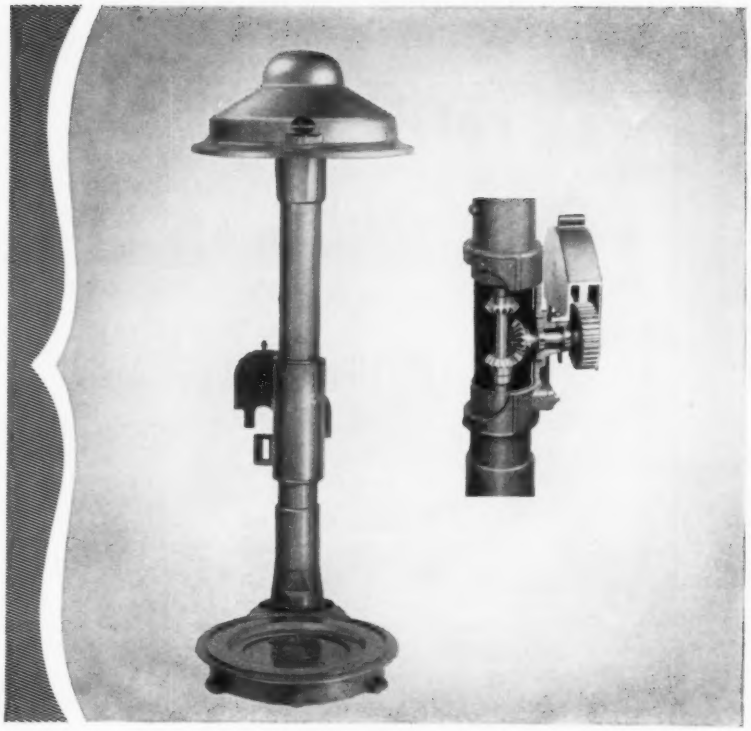
Among the advertisers were:

William Allen Sons Co.
American Crayon Co.
American Moistening Co.
American Pulley Co.
William M. Barrell Co.
Cannon Mills
Carrier Air Conditioning Co.
Collins Bros. Machine Co.
Crompton & Knowles Loom Works
Dinsmore Mfg. Co.
Lincoln Electric Co.
Lunkenheimer Co.
New York & New Jersey Lubricant Co.
C. J. Root Co. (Veeder-Root)
William Schofield Co.
Victor Shaw Ring Traveler Co.
S. Morgan Smith Co.
Standard Crayon Mfg. Co.
Western Electric Co.
Whitinsville Spinning Ring Co.
Draper Co.
Emmons Loom Harness Co.
Foster Machine Co.
Garland Mfg. Co.
General Electric Co.
A. Ginsberg & Son
Howard Bros. Mfg. Co.
Hussong Dyeing Machine Co.
Klauder-Weldon Dyeing Machine Co.
Lestershire Spool & Mfg. Co.
Lowell Machine Shop
Merrow Machine Co.
B. F. Perkins & Son Co.
C. G. Sargent's Sons Corp.
Seaboard Airline Railway
J. E. Sirrine
Southern Railway
Utica Novelty & Mill Specialty Co.
Westinghouse Electric & Mfg. Co.
Wildman Mfg. Co.

Also there was W. P. Horner Wagon Mfg. Co. advertising their "best seasoned hickory and oak drays;" also combination subscription offers with *McClure's, Uncle Remus Magazine*, and the *Delineator*.

► More up to date—TI is still getting inquiries for extras on the "Man-Made Fibers" section and "Chart on Properties & Uses of the Man-Made Fibers" (Aug. '58). Such as **Fred A. Ingram,** Dow Chemical Co., Camden, N. J., who finds the chart "invaluable;" **C. T. Kennedy,** V.P. Dawbarn Bros., Inc., Waynesboro, Va., says "most impressive," and his article is receiving "quite a few requests for reprints . . . maybe even a new customer." Other requests include **Harold P. Schick,** Res. Lab. General Tire & Rubber Co., Akron, O.; also Dr. **F. W. Bauer,** same Co., Wayne, N. J.; **C. Beaulieu,** Domil Ltd., Sherbrooke, Que., Can.; **Roy V. Johnson,** Supt. James Lees & Sons Co., Glasgow, Va.; also **R. C. Gebert,** V.P. same Co., Bridgeport, Pa.; **Robert C. Wilkie,** Dir. Res. Ludlow Mfg. & Sales Co., Needham Heights, Mass.; **S. E. Swanson,** Mgr. Bigelow-Sanford Carpet Co., Inc., Thompsonville, Conn.; **C. F. Crowell,** Sayles Finishing Plants, Inc., Saylesville, R. I.;

(Continued on page 24)



SOUTHERN STATES' NEW COILER LINE HAS ALL ENGINEERING AND DESIGN FEATURES WANTED BY MILL MEN

To provide mills with a premium-quality coiler, every engineering and design feature wanted by mill men has been included on the new Southern States Coilers.

A new center adapter (see cutaway view above) permits the stand, head, and base to swivel as a unit within the adapter collar. The coiler may thus be offset for can diameters up to 20 inches and still maintain a straight gear drive take-off for coilers of all makes.

Southern States Coilers are designed for direct attachment to any make of card, left or right hand. Installation is rapid and economical. Other outstanding features of the Southern States Coiler include: ball bearing throughout—head, shaft, cantable ... cut tooth gears throughout ... tubular steel stand ... precision-ground calender rolls ... self-aligning pillow blocks on upright and calender roll shafts ... fully adjustable can table ... quickly detached coil spring roll-loading device ... and many others fully described in our Technical Bulletin 205, available from your Southern States representative or by mail direct from us.

SS®
SOUTHERN STATES
EQUIPMENT CORP.
HAMPTON, GEORGIA

caprolan®
TEXTURED YARN SEMINAR

DON'T LET THREAD GUIDES THROW YOU

Running textured filament yarns for the first time? Congratulations! It's a big step forward. For greatest success, keep this fact always in mind:

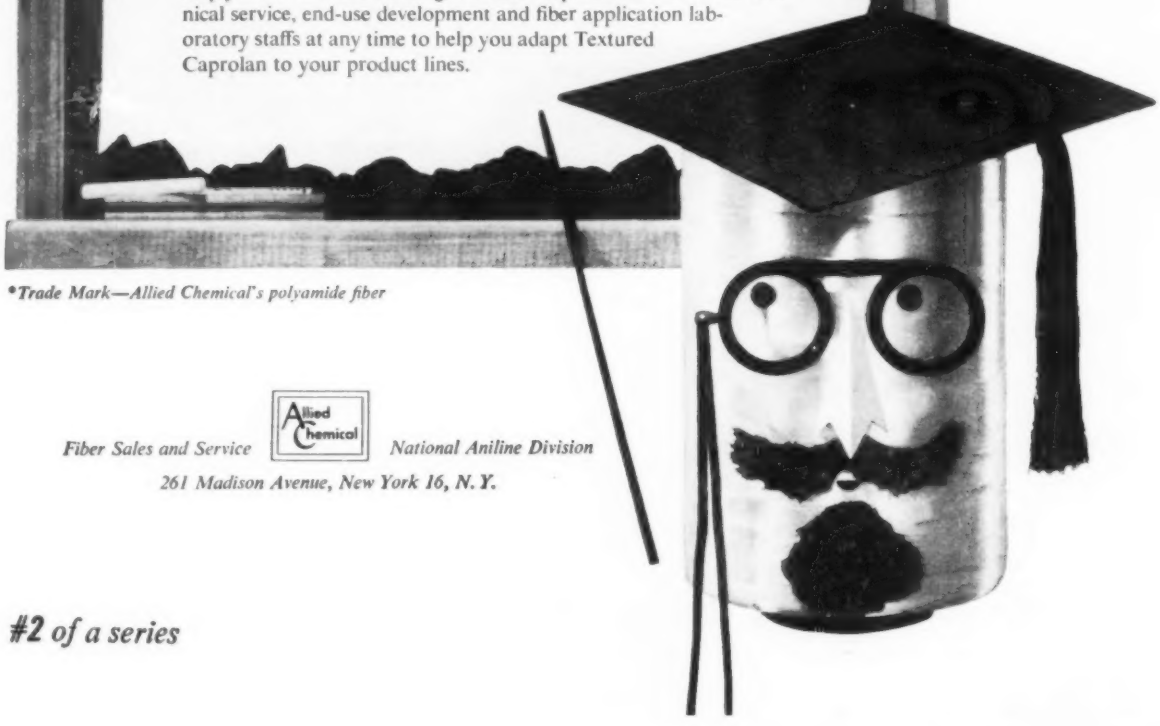
FACT: Textured Filament Yarns And Spun Yarns Are Not The Same

And because textured filament yarns are different, certain adjustments in mill methods are necessary to get the best results from these remarkable new yarns.

EXAMPLE:

Take the matter of thread guides, for instance. *Nicked* or *worn* thread guides can cause considerable damage with filament yarns and may result in streaks and filament breakage. Best idea is to install satin-finished ceramic guides which have been especially developed for use with filament yarns.

Thread guide damage is just one example of the problems we can help you avoid when running Textured Caprolan*. Call on our technical service, end-use development and fiber application laboratory staffs at any time to help you adapt Textured Caprolan to your product lines.



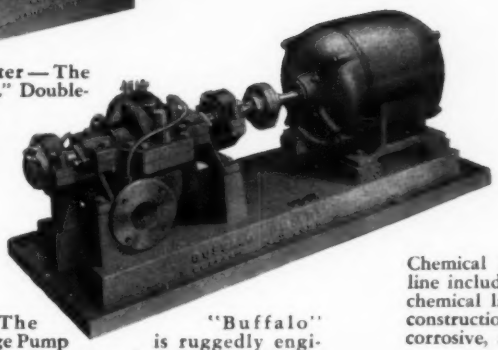
*Trade Mark—Allied Chemical's polyamide fiber

Fiber Sales and Service Allied Chemical *National Aniline Division*

261 Madison Avenue, New York 16, N. Y.

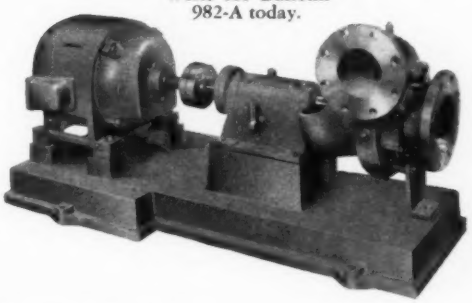
***#2** of a series*

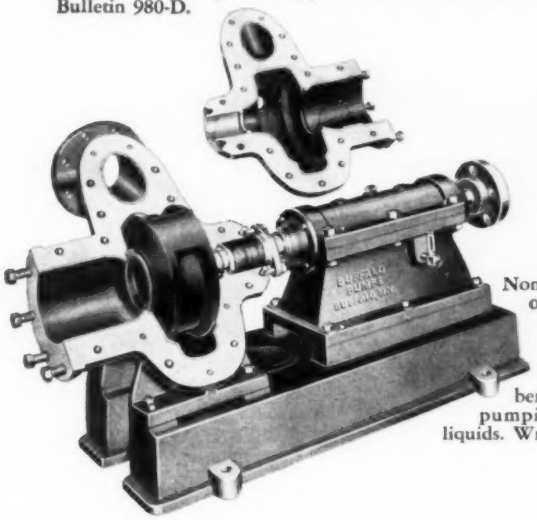
Clear Water — The "Buffalo" Type "SL" Double-Suction Pump is recognized for its highly efficient clear water service throughout industry. Capacities from 10 to 14,000 gpm. Write for Bulletin 955-R.



High Pressure — The "Buffalo" Type "RR" Multi-Stage Pump is ruggedly engineered to deliver peak efficiency on boiler feed and other clear water applications against heads as high as 1500 feet. Capacities range up to 900 gpm. For full details write for Bulletin 980-D.

Chemical Liquids — The complete "Buffalo" line includes ten specially designed pumps for chemical liquids. Available in several types of construction for handling a wide variety of corrosive, abrasive or high-consistency liquids. Write for Bulletin 982-A today.





Non-Clogging — "Buffalo" Diagonally Split-Shell Pumps are designed for moving high-consistency liquids, with down-time reduced to an absolute minimum. A number of models are available for pumping abrasive and corrosive liquids. Write for Bulletin 953-K.

WHATEVER YOUR LIQUID-MOVING PROBLEM, THERE'S PROBABLY A "BUFFALO" PUMP TO SOLVE IT!

And the fact that "Buffalo" builds a *complete line* of pumps — a type, size and capacity to fit almost every liquid-moving need — can save you money right from the start. It means you never need to pay for "more pump" than you actually require.

You'll find a "Buffalo" Pump to match your exact requirements, with complete assurance of the utmost efficiency, dependability, ease of maintenance and long-range economy. Just contact your nearest "Buffalo" engineering representative, or write us direct. We'll be glad to recommend the pump that's best-suited to your needs.

THE COMPLETE "BUFFALO" LINE ALSO INCLUDES: Heat Transfer Pumps, Close-Coupled Pumps, Sump Pumps and Raw Sewage Pumps. Special alloys available in all models.

Engineered into every "Buffalo" Pump is the famous "Q" Factor — the built-in QUALITY which provides trouble-free satisfaction and long life.

BUFFALO PUMPS
DIVISION OF BUFFALO FORGE CO.
175 Mortimer St. • Buffalo, N. Y.
Canada Pumps Ltd., Kitchener, Ont.
Sales Representatives in All Principal Cities

"Buffalo" PUMPS

A BETTER CENTRIFUGAL PUMP FOR EVERY LIQUID

NEW D&F "FRAME RECORDS" TELL
Improved Spinning Production Story

- Reduced cost per pound
- higher speeds
- more uniform tension
- less downtime
- less doffing

Get the facts on the New D&F Design Features
Ask for "D&F NEWS QUICK REVIEW"

Compare your own spinning room records with conservative figures offered by a typical cross section of progressive mills in a recent Davis & Furber mill survey. The story of *New Design Features and their operation* on the Davis & Furber Model F and G Ring Spinning Frames is one of *flexibility in design and application*. It makes these D&F Models adaptable to individual Mill Management Production Improvement Plans — to stock and blend specifications — to proposed investment budget limitations — to proposed cost-per-pound reduction plans.

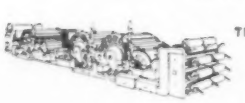
Facts have been outlined for you in **the new D&F News Quick Review.**

FIVE PROOFS in this QUICK REVIEW

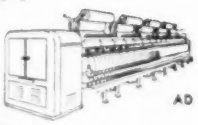
1. **Present acceptance and use in Mills.**
2. **Comparative production figures.**
3. **New design features.**
4. **Modernization of Existing Frames.**
5. **An invitation to prove this "Improved Production" on your own roping with D&F New Demonstrators.**

Davis & Furber can offer a Production Improvement Plan for *your* mill. That's where the advice and counsel of D&F "Coordinated Production" technicians follows through. To get (a) *published proof* of latest production results, plus (b) *specific proof* (per item 5) tied to your present production results, act at once. Call or write now and let us schedule you for a *Presentation of your future yarn production schedule.*

DAVIS & FURBER
MACHINE COMPANY



TEXTILE MACHINERY DESIGNERS AND MANUFACTURERS
North Andover, Mass.
Charlotte, North Carolina



AD 13-2

Member — American Textile Machinery Association

CARDS • SPINNING FRAMES • PREPARATORY MACHINERY • WARP DRESSING MACHINERY • FINISHING MACHINERY
MACHINERY MODERNIZATION • ACCESSORIES, SUPPLIES, CARD & NAPPER CLOTHING, GARNET WIRE, TAPES & APRONS
SPARE PARTS • TECHNICAL SERVICE & CONSULTATION

Shorts and Remnants

(Continued from page 21)

Harold J. Northup, Chem., Bradford Dyeing Assoc. (U.S.A.), Westerly, R. I., etc., etc.

► And speaking of man-made fibers, here's a bonny lassie for you—

Sergeant Joan Lee, Dir. of the Dagenham Girl Pipers touring the U.S.A. with the "Ice Capades." Said lassie is receiving a ceremonial sword award from Royston Dunford of Courtaulds (Ala.) Inc. And the costumes of said Pipers, kilts and all, are made of Courtaulds' fibers.

This and That

Households which purchased milk in Chicago in May 1956 paid an average of 21.5¢ per qt. The equivalent farm price was 8.8¢, leaving a marketing margin of 12.7¢, according to a red-hot textile item received.

The Industrial College of the Armed Forces, Washington, D. C., will study textiles through TI.

Cosa Corp., N. Y., sends on request received for reprint of item on Vollenweider equipment in our March issue, and we located said item in competitor's pages.

Recent heading noted says "Russian Plastics Drive Looms;" it wouldn't excite Draper Corp. You have to read it twice.

And there is plenty to read twice and more on Wash-and-Wear in this issue, and plenty more to read in that coming in Mid-November Annual Product Parade & Buyer's Guide—a year of new equipment, supplies, and services for all textiles with available literature and sources of supply—all in one issue.

► We'll be seeing you.

ELIMINATE THE FIRE HAZARD!

Clean and Rustproof Textile Equipment with . . .

NON-FLAMMABLE, NON-TOXIC Immunol

REG. U.S. PAT. OFFICE

● IMMUNOL is safety insurance. Replace flammable solvents with this non-flammable, non-toxic solvent and you'll get these outstanding benefits:

SAFETY

IMMUNOL can be used anywhere in the plant without danger of fire. In addition, it will not harm fabric or workers' skins. It is odorless so workers will not be affected when it is used.

FASTER CLEANING

IMMUNOL quickly removes dirt, dust, oil, grease, soil, etc. from every kind of textile equipment. It cleans faster than ordinary solvents and it can also be used to clean woodwork, plastic and enameled surfaces.

ECONOMY

1 part IMMUNOL to 20 parts water, either hot or cold, hard or soft, is sufficient for all cleaning operations. The cost of this mixture is less than 13c per gallon.

RUSTPROOFING

IMMUNOL protects metal from rust as it cleans and the protective coating is so minute it cannot be seen or felt. No residual oily matter remains to hold dust, lint or dirt.

Fibregard

REG. U.S. PAT. OFFICE

The original colloidal lubricant that will be of tremendous importance to you if you're processing man-made fibres. No other lubricant can provide the outstanding benefits FIBREGARD provides because it adheres uniformly to the smooth, glassy surfaces of the synthetics that normally repel moisture and other lubricants. Get details on this original Harry Miller Corp. product, too.

Textile mills throughout the country have been using IMMUNOL with outstanding success—and safety—for years. Write, wire or call for a free sample today.

HARRY MILLER CORP. HAMICO 4th & BRISTOL STREETS PHILADELPHIA 40, PA.

HARRY MILLER CORP.

Original Products and Processes Since 1936

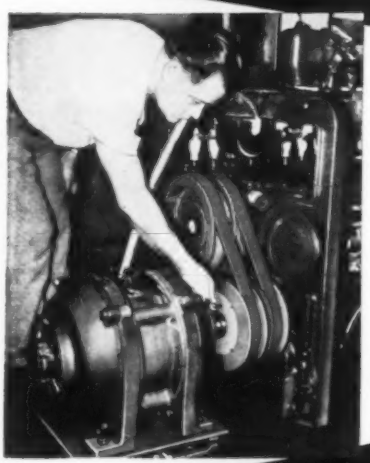
4th and BRISTOL STS., PHILA. 40, PA.

DAvenport 4-4000 *Service Representatives in Principal Cities*

Manufacturers of
● GLYCOLA ● FIBREGARD ● ACTIVOL
● POTENTOL ● REVERSOL ● FIRMTAL

Now--

Pre-set the Pitch Diameter



COMPONENTS OF
DODGE SPINNING FRAME DRIVE

- Variable Sheave with Automatic Pitch Diameter Gage
- Taper-Lock Companion Sheave
- Slide Motor Base
- Dodge Sealed-Life Belts

No more "cut and try" with the new Dodge Variable Sheave

An automatic Pitch Diameter Gage, graduated in tenths of an inch, is mounted on the outside flange of the new Dodge Variable Sheave. A spiral line on the hub intersects with the gage dial as the flanges are moved in or out. Pitch diameter is read directly on the dial.

Quickly . . . accurately . . . easily . . . you get the pitch diameter you want with a one point adjustment. The variable sheave locks as a unit when tightened on the shaft, utilizing the Taper-Lock principle.

Single or double strand drive

The Dodge Variable Sheave is available for both single or double strand drives — utilizing R-Section Sealed-Life V-Belts in the single or double strand and W-Section in the single strand only. The new, higher ratings of these belts, which contribute to the larger load carrying capacity of the Dodge Variable Speed Drive, open new opportunities for drive economy — both in initial cost and in maintenance. All components — the new sheave, companion sheaves, belts and motor base — are available from stock. Write for full details.

DODGE MANUFACTURING CORPORATION, 3500 Union St., Mishawaka, Ind.

DODGE
of Mishawaka, Ind.

Call the Transmissioneer, your local Dodge Distributor. Factory trained by Dodge, he can give you valuable assistance on new cost-saving methods. Look in the white pages of your phone book for "Dodge Transmissioneer."

New word in profits: Zefran®

zĕf-răn

(Zĕf-răn), n. 1.

Entirely new acrylic alloy fiber made exclusively by The Dow Chemical Company. Zefran will make money for you because it is the last word in blendability, dyeability, finishing, processing, performance, and fashion. 1. In blends, Zefran improves bloom and hand, gives cotton and wool a year-round season. 2. Takes wide range of standard dyes (including vats)—allows greater flexibility in choice of dyestuffs than any other fiber. 3. Makes the finishing of fabrics easier and all but makes a loom finish a reality. 4. Processes like a natural fiber—can be efficiently handled on all standard equipment used for staple yarn manufacture. 5. Performs like a trooper—builds "maid service" right into fabric. 6. Gives fashion a shot in the arm... here is the luxury fiber man made for the woman who wants *everything*.

Fabrics now being created by selected mills (for apparel only). For further information write The Dow Chemical Company, Textile Fibers Department, Williamsburg, Va.

You can depend on DOW

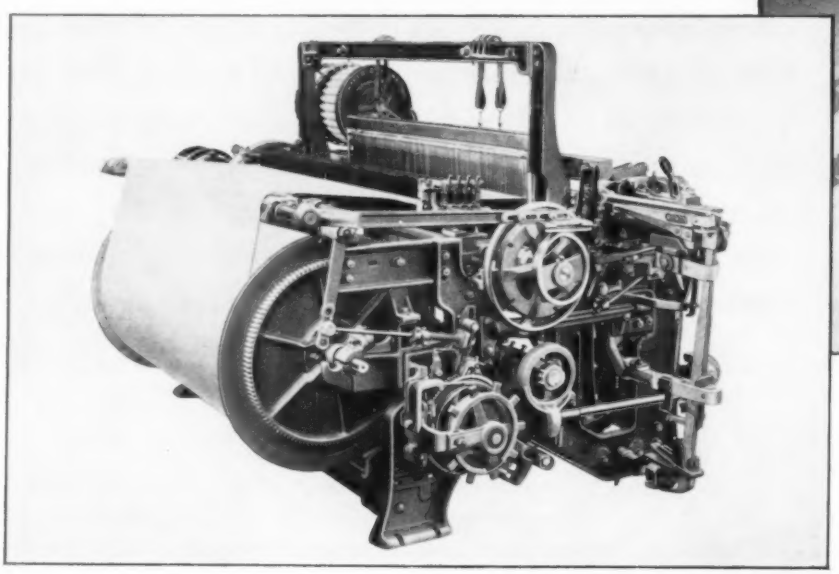
Improvements make them different...

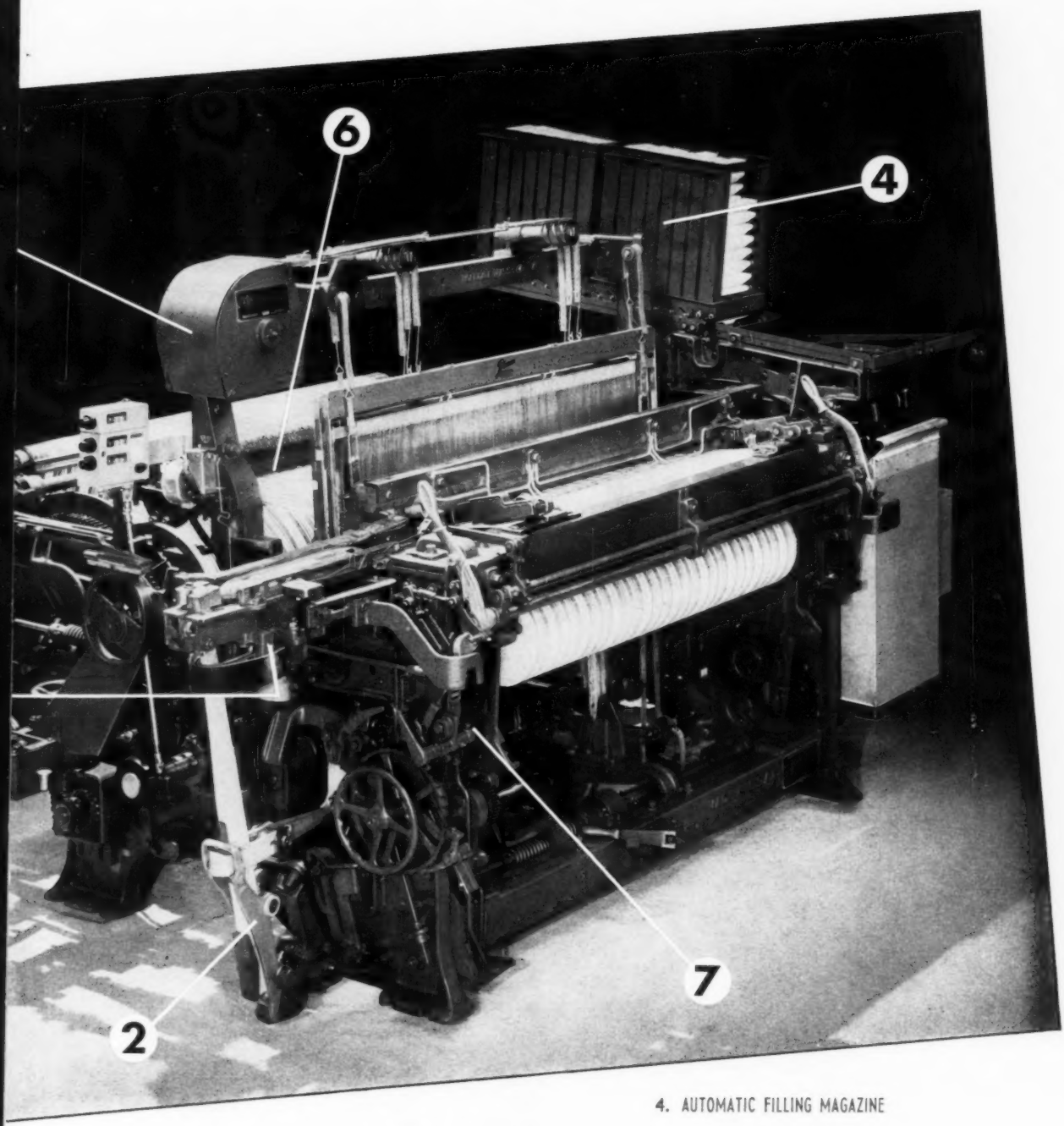
Today's high-speed automatic X-2 Model Loom, with its many technical advances, is a far cry from the X-2 of yesteryear.

Research and Engineering developments, while reducing costs, have brought about "new highs" in loom efficiency and production.

Many of these attachments currently available on new Draper X-2 Looms can be adapted to your looms.

See your Draper Representative for additional information.





1. TRU-TENSION LET-OFF
2. LINK TYPE PARALLEL
3. CLOCK SPRING TOP MOTION
4. AUTOMATIC FILLING MAGAZINE
5. # 14 SHUTTLE CHECK
6. SERRATED WARP STOP ELECTRODE
7. HIGH ROLL TAKE-UP

DRAPER CORPORATION

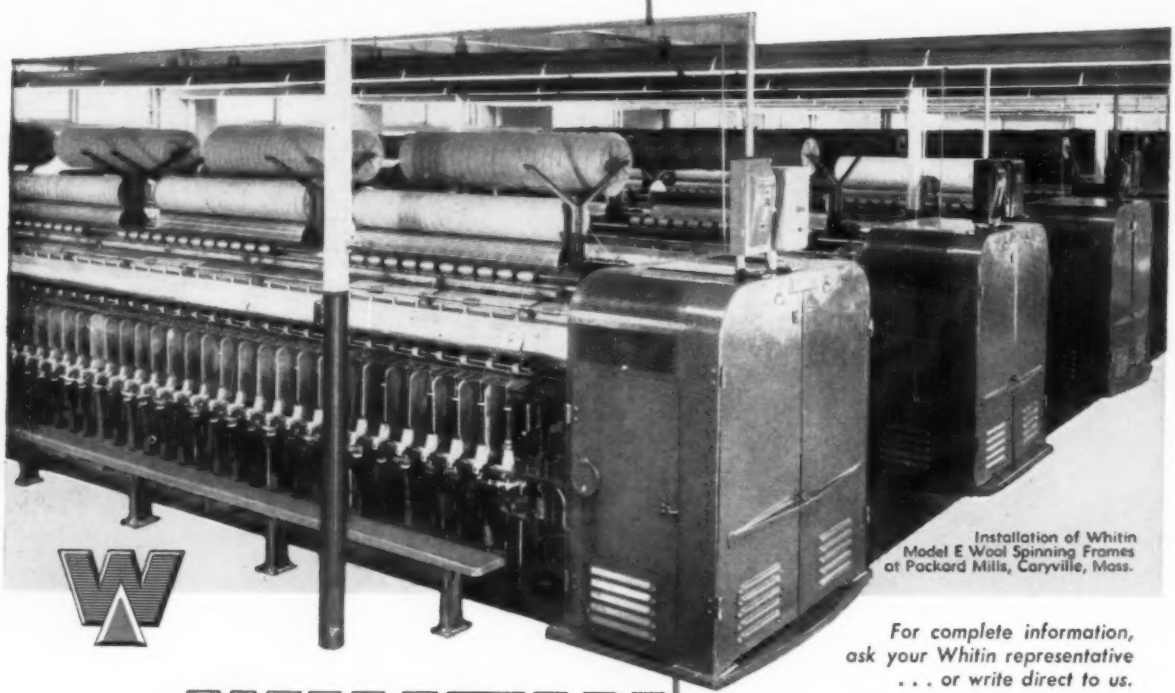
HOPEDALE, MASS.

ATLANTA, GA. • GREENSBORO, N.C. • SPARTANBURG, S.C.

16 GOOD ways to get BETTER results from the BEST wool frames you ever owned

Whitin Model E Wool Spinning frames have been known for many years as the "work horses" of the industry. Their reputation for efficiency in producing highest quality yarn at lowest cost per pound is firmly established. However, since its introduction to the industry, many new mechanical improvements have been developed which greatly increase its overall performance. Mills which for years have relied upon the Model E now have the opportunity — and at relatively low cost, too — to get better results from these frames by installing a combination of the new parts and accessories now available.

1. "Magic-Grip" drive sprockets 2. Oilless front top roll weight hooks 3. Cylinder replacement pulleys 4. No slip drum covers 5. Simplified application for ring auto-lubrication 6. New upright lay shafts 7. Reworked twister heads 8. Anti-friction twister heads 9. Balloon control rings 10. Anti-friction idler gears 11. Improved thrust box for traverse motion 12. New full-fluted type delivery rolls 13. Adjustable roving guides and nylon B.B. inserts 14. Simplified main shaft bearing assembly 15. New type traverse cams 16. Roving guide traverse motion assembly



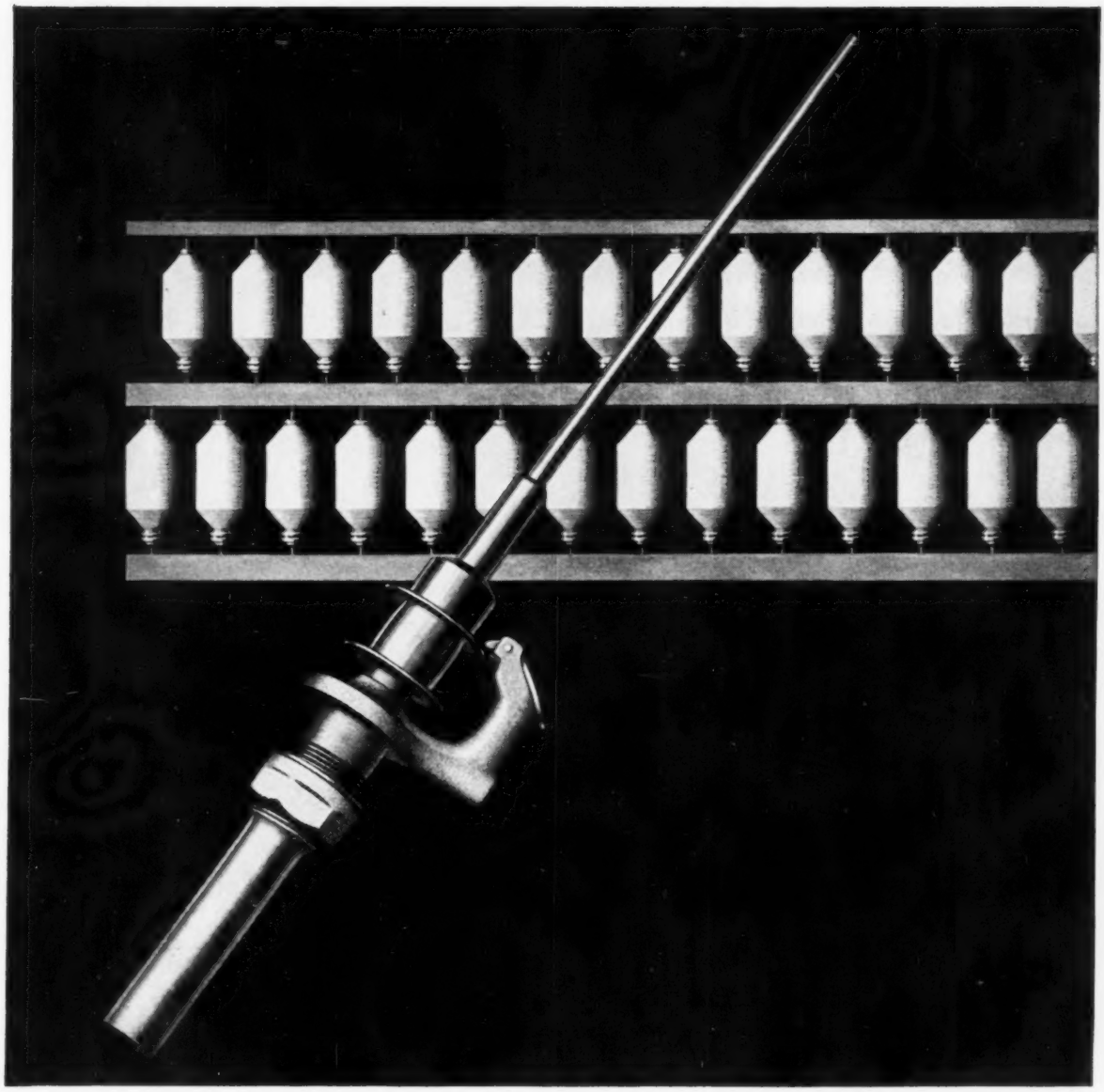
Installation of Whitin Model E Wool Spinning Frames at Packard Mills, Caryville, Mass.

For complete information, ask your Whitin representative . . . or write direct to us.

WHITIN MACHINE WORKS

WHITINSVILLE MASSACHUSETTS,

CHARLOTTE, N. C. • GREENSBORO, N. C. • ATLANTA, GA. • SPARTANBURG, S. C. • DEXTER, ME.



long-lasting lubrication lengthens bearing life

Premium-grade Spinesso has been specially formulated to solve lubrication problems for high-speed spinning and twister spindle bearings. It minimizes the formation of dark, sludge-like deposits. This means a *cleaner operation, better protection . . . less wear, less frequent lubrication.*

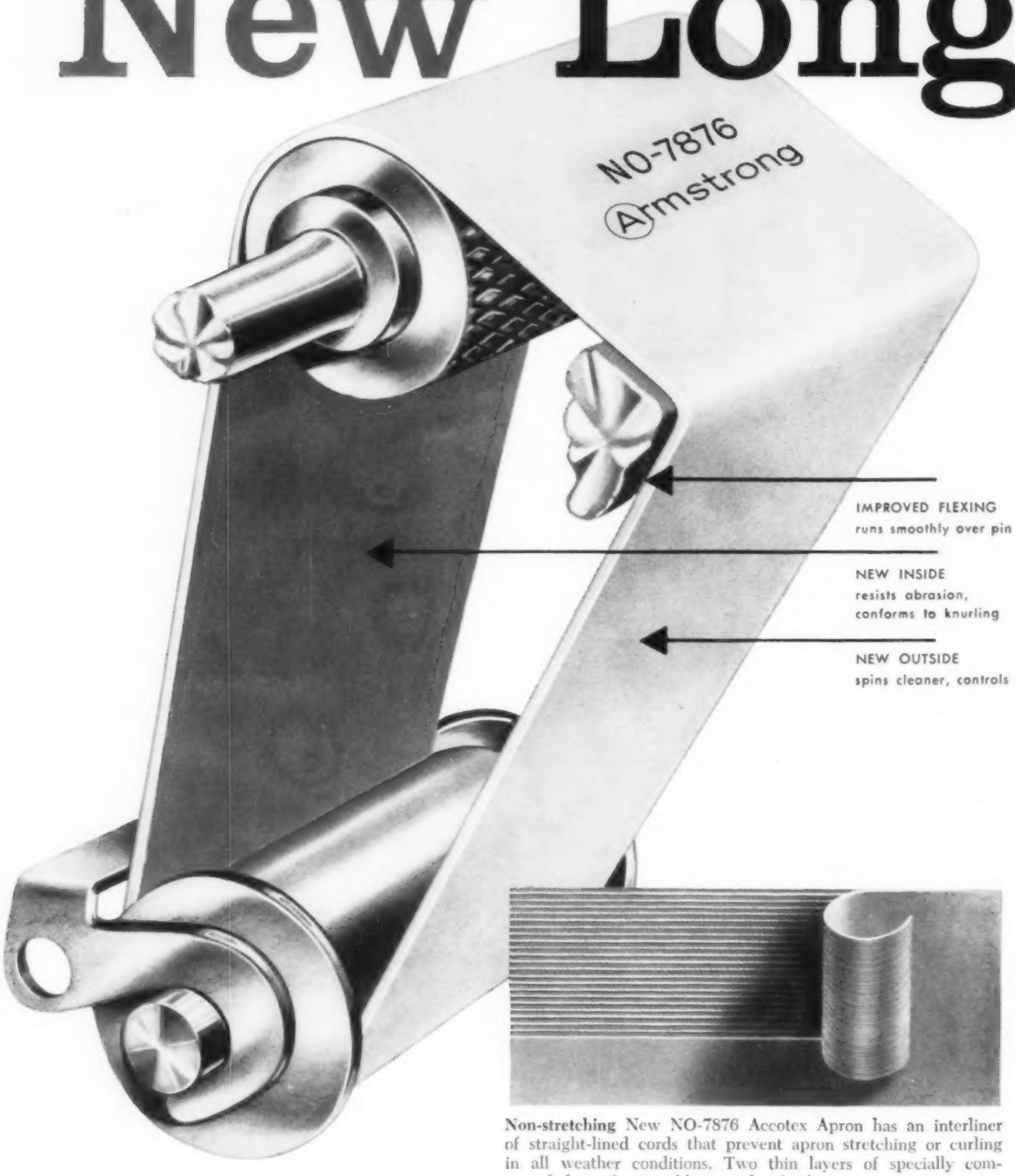
Free-flowing Spinesso gives positive protection particularly at critical start-up time – when fast, dependable lubrication is so necessary in preventing wear. Rusting and pitting, serious problems in the humid atmosphere of most textile mills, are effectively controlled by Spinesso.

Spinesso is also well-suited for other mill applications such as stitchers, counters and similar precision equipment. It can effect substantial savings by reducing handling and inventory and simplifying lubrication. Available in *three* viscosity grades. Complete technical data can be quickly obtained at your nearest Esso office in New England, New York, New Jersey, Pennsylvania, Delaware, Maryland, Virginia, West Virginia, the Carolinas, Tennessee, Arkansas, Louisiana, and the District of Columbia. Or write Esso Standard Oil Company, 15 West 51st St., New York 19, N. Y.

SPINESSO® Esso

ESSO RESEARCH works wonders with oil

New Long-



Non-stretching New NO-7876 Accotex Apron has an interliner of straight-lined cords that prevent apron stretching or curling in all weather conditions. Two thin layers of specially compounded synthetic rubber sandwich this core.

Life Apron

Armstrong development produces bottom aprons that bring new economy to long-apron systems

You'll be able to measure the life of your bottom aprons in years, not in months, when you equip your long-apron frames with the new Accotex NO-7876 Apron. This new thin-wall spinning apron has been running in test mills for nearly two years—and in every case, it's still in excellent operating condition.

The NO-7876 uses the same two-compound principle that has been so successful on double-apron systems. To meet the different conditions on long-apron systems, however, two entirely new rubber compounds had to be formulated for the NO-7876.

The rubber on the outer surface has greatly improved resistance to ozone and flex cracking. And it has the right fiber handling characteristics to insure good yarn control.

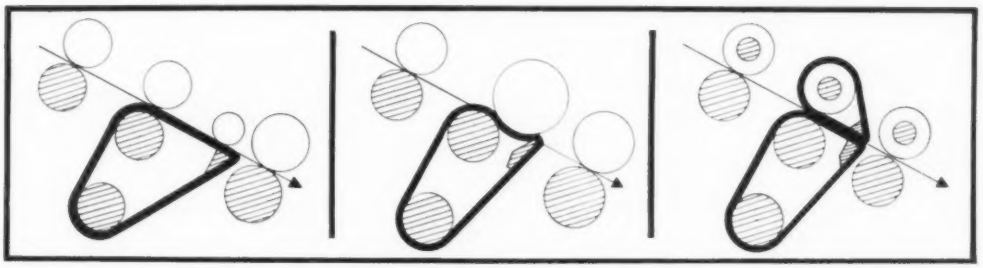
The inner surface is made of an abrasion-resistant rubber that has unusual conformability to the drive roll knurling. This assures accurate tracking and full power transmission. This inner surface also has a low coefficient of friction, allowing the apron to run smoothly over the nosebar without tucking or jamming.

These new rubber compounds help to give the NO-7876 long life. But there's more to good apron performance, of course, than long life. The NO-7876 incorporates all the time-tested features that have been built into millions of Accotex Aprons which are now helping mills turn out quality yarn.

One of the most important features is the patented seamless construction that uses a strong cord interliner to prevent stretching and curling. This construction also helps to give the super-flexibility required for good performance on long bottom apron systems.

In addition, the rubber compounds in the NO-7876 Aprons have built-in electrolytes that help to reduce the build-up of fibers on the apron surfaces.

Ask your Armstrong man for more information on the new NO-7876 Accotex Apron. He'll help you set up a test in your mill. Or write to Armstrong Cork Company, Industrial Division, 6411 Ivy Street, Lancaster, Pennsylvania.



The Accotex NO-7876 is designed for use on spinning systems such as these.

Armstrong ACCOTEX APRONS

. . . used wherever performance counts

CHEMICALS for better, brighter fabrics

The law of the market place: Poor product, poor profit-and-loss statement. So anything that helps textile finishers turn out better fabrics has real meaning for the industry. Chemicals discussed here can help you send to market textiles that will build a reputation for superiority. If the problem is iron deposits on apparel fabrics, heat-sealing of rug coating, wrinkling in cotton—or any of several others—there is information here of interest to every profit-minded textile man.

You may wish to check certain items in this advertisement and forward to those concerned in your company.

Route to:

_____

_____

_____

_____

IRON STAINS LICKED

by new TEA formula

Streaks and stains can mar your profit picture just as surely as they mar your fabrics. Here's help in eliminating them. Triethanolamine (chelation grade) is easy to handle, low in cost, and knocks ferric iron right out of the picture.

The profit-conscious plant manager (and that means just about everyone in the business) will be happy to know that chelation under high pH conditions can be effected at lowest cost with chelation grade triethanolamine (TEA).

Chelating agents, of course, have been important to all branches of the textile industry for a long time. Versatile Versene® products, for example, while extremely effective in so many applications, are not as effective in high pH systems. In kier boiling operations or scouring with caustic soda, TEA provides a perfect solution to problems of iron deposit staining.

Used either by itself or in combination with Versene products, TEA keeps cotton cloth unstained and unweakened by reacting with ferric iron to form a stable chelate structure. Precipitation of highly insoluble ferric hydroxides is eliminated. This is doubly important in view of the fact that these deposits on cotton cloth not only cause stains but make any subsequent dyeing or bleaching operation extremely ineffective. They catalyze the decomposition of peroxide to such an extent that oxy-cellulose is formed, weakening the fabric.

Not the least of triethanolamine's advantages is that it also functions as an emulsifier, which means, of course, that it will prevent any insolubles from being re-deposited on the cloth.

Available from Dow or many of its distributors, specially prepared TEA has a much lower freezing point than triethanolamine which has not been thus prepared. It flows readily at normal plant storage temperatures and will not become solid until temperatures drop to 35° F.

News briefs about other Dow chemicals

FOR THE TEXTILE INDUSTRY

CAUSTIC SODA

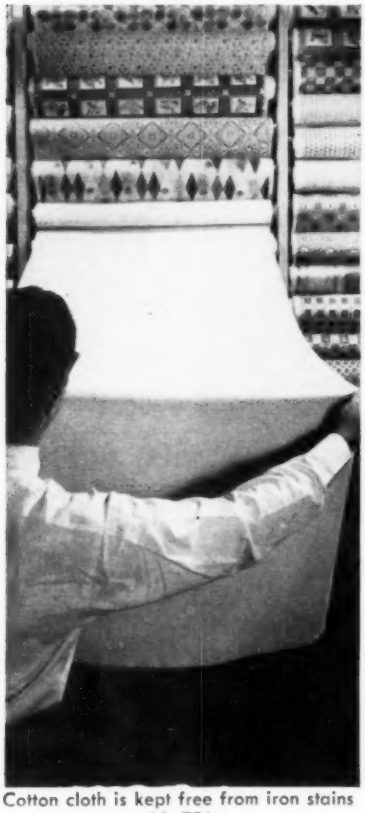
New 86-page handbook gives comprehensive information on handling and storage, analysis methods. Graphs, tables, nomographs.

DOWICIDE® A

Added to starch sizing, it prevents starch breakdown in vats and mildew damage in gray goods, eliminates increased bleaching cost due to mildew.

TEA's low molecular weight means that it will chelate greater quantities of iron per pound than other chelating agents. In combination with Versene or other such agents, it provides maximum chelation over a wide pH range.

Importance of chelating agents. Dow's belief in the importance of chelating agents has led to construction of new Texas plant facilities where the industry's widest line of chelating agents is produced. Dow is determined to make chelating agents available to all at attractive prices.



Cotton cloth is kept free from iron stains with TEA.

METHOCEL . . .
Answer to latex thickening problems

Wherever a latex thickening problem exists, chances are there is a Methocel® product ready to do the job. Methocel products do more than thicken . . . they control uniformity and weight of the coating . . . act as protective colloid in the latex itself. Methocel products are non-ionic and are compatible with most dyes used in formulations.

Methocel products also have value as emulsion stabilizers and viscosity control agents in inks used on printed fabrics. They thus control the consistency of the ink for smooth, even printing.

Investigate these two bright new stars in the Methocel group: 60 HG for emulsion stability; 90 HG, 15,000 cps., for efficient thickening.

Methocel controls uniformity and weight of latex, acts as protective colloid.

EDA 98%, a Dow exclusive, goes into resins for high wrinkle-resistance.

WRINKLE RESISTANCE . . .
Get it with ethylenediamine resins

Since the early '50s, resins made with ethylenediamine have been used for treating finished cotton. Now, a quality and a purity never before achieved make EDA 98%, a product pioneered by The Dow Chemical Company, the ideal base for such resins. Cotton finishers in ever-increasing numbers are finding that resins made with EDA 98% make fabrics highly resistant to wrinkling, as well as providing excellent wrinkle recovery properties. In addition, it means improved dimensional stability and storage stability, plus high color retention in the finished cotton fabrics.

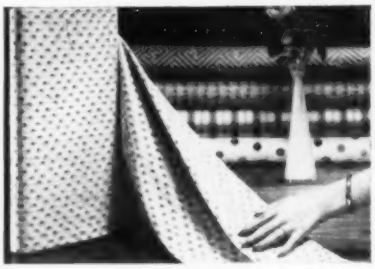
Dow patents reflect the many years of research which have made possible this greatly improved ethylenediamine. The result: resins which are lighter in color. For the first time, they can now be used to treat pastel and white cotton fabrics, opening up the important "dress-up" market, including dress shirts, blouses, women's skirts and the like.

★ ★ ★ ★

If you're puzzled about how to improve your present operation, make it more productive or more economical, why not consult with Dow chemists? They'll be happy to discuss your problems with you and suggest possible solutions. Write THE DOW CHEMICAL COMPANY, Midland, Michigan, Chemicals Sales Department 774T-1

POLYOLS

Send for folder, "World's Widest Line of Polyols". Dow offers fastest delivery of the right polyol for the right job, is constantly developing promising new polyols.



DOWANOL®

Largest and most complete line of glycol ether solvents for dyeing purposes. Folder and new booklet on Dowanol products available on request.

Dow chemicals basic to the textile industry

Glycol Ethers • Alkalies
Thickeners • Industrial Glycols
Glycerine • Chelating Agents
Ion Exchange Resins • Preservatives
Solvents • Polyols

YOU CAN DEPEND ON

DOW

TEN-O-FILM starches and synthetics go hand in hand

Looking for a starch that's compatible with the adjuncts you use in warp sizing synthetics? Ten-O-Film is your answer. This chemically modified starch derivative was specially developed to simplify and improve processing of both the new synthetic and natural fibers.

Ten-O-Film brings new economies to sizing operations. It requires less boiling time than conventional starches: Ten-O-Film reaches stable viscosity in 30 minutes and remains stable even under prolonged heating and circulation. Desizing can be carried out more readily, hence more economical dyestuffs can be used and with greatly reduced bleeding. The clarity of Ten-O-Film sizes will not mask the bright or pastel shades so widely used in modern fabrics. In desizing, the soap boil-off may sometimes replace the enzyme desizing process.

These are only a few of the advantages of using Ten-O-Film starches. Our technical representative will give you the complete Ten-O-Film story. He has tried and tested formulations for all popular synthetic and natural fiber blends.

The technical facilities of the world's largest corn processors await your call. These facilities include laboratories devoted to continuing research in textile technology, as well as unmatched sources of firsthand textile knowledge and experience. Our technical representative will be glad to help you take advantage of these resources. For full information, call our nearest sales office or write direct.

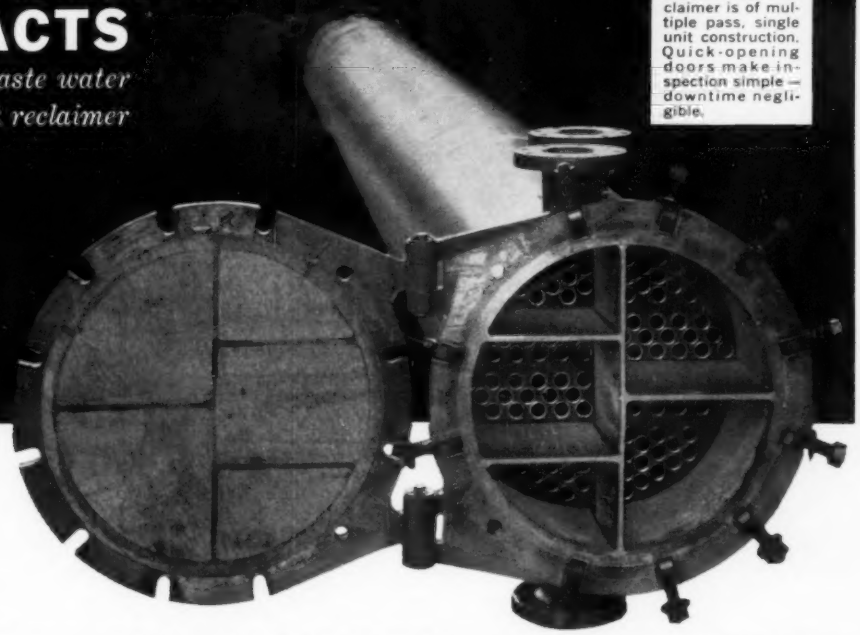
TEN-O-FILM® starches

Fine products for the Textile Industry: CLARO® · GLOBE® EAGLE® · FOXHEAD® · TEN-O-FILM® starches · GLOBE® dextrines

CORN PRODUCTS SALES COMPANY · 17 Battery Place, New York 4, N. Y.

GET ALL THE FACTS

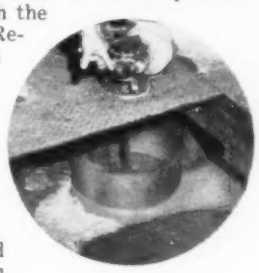
before you buy any waste water heat reclaimer



P-K Closed Type Waste Heat Reclaimer is of multiple pass, single unit construction. Quick-opening doors make inspection simple — downtime negligible.

Compare, point by point, P-K Heat Reclaimers with any competitive offering.

1. The initial cost is less for the capacity specified – P-K's multiple pass, single unit construction eliminates need for additional pumps on fresh water side, does away with extra connections required for stacked stages. **2.** Oversized heating surface for designed capacity gives liberal fouling factor – provides expanded capacity for future needs. **3.** P-K *single unit* construction saves valuable floor space. Place the reclaimer on the ceiling, or wall, or outside the building, as desired. **4.** Lint, grease or curds found in all waste water are trapped by the P-K Roto-Screen* in the sump tank – the logical place to remove fouling agents *before* they reach the reclaimer. **5.** Yet, in the event of sump flooding, P-K Reclaimers are fitted at both ends with quick-opening doors that provide easy access to the tubes for inspection and cleaning. **6.** In addition, an automatic backwash, self-cleaning device–so essential to multi-unit reclaimers–may be applied to P-K Reclaimers, if desired. With P-K construction, however, the additional cost is not warranted. Above all, with the installation of either a P-K Closed or Pit-Type Reclaimer, you are protected by the responsibility of the largest and oldest manufacturer in the field, a responsibility covering the manufacturing and assembling of the complete unit in our own plant. If you are considering a waste heat recovery operation, use the coupon today. Complete field engineering service is available without obligation.



ROTO-SCREEN* Provides lint-free hot waste to heat reclaimer. Accumulated lint and scum are easily removed from sump.

*Patented

20

Patterson Kelley

Laundry and Textile Division

P-K Steam Mixers • P-K Boiler Return Systems • P-K Heat Exchangers • P-K Pre-Krete Lined Storage Water Heaters

Patterson-Kelley Co., Inc.
2811 Wilson Street
E. Stroudsburg, Pa.

Send me information on P-K Heat Reclaimers checked below:

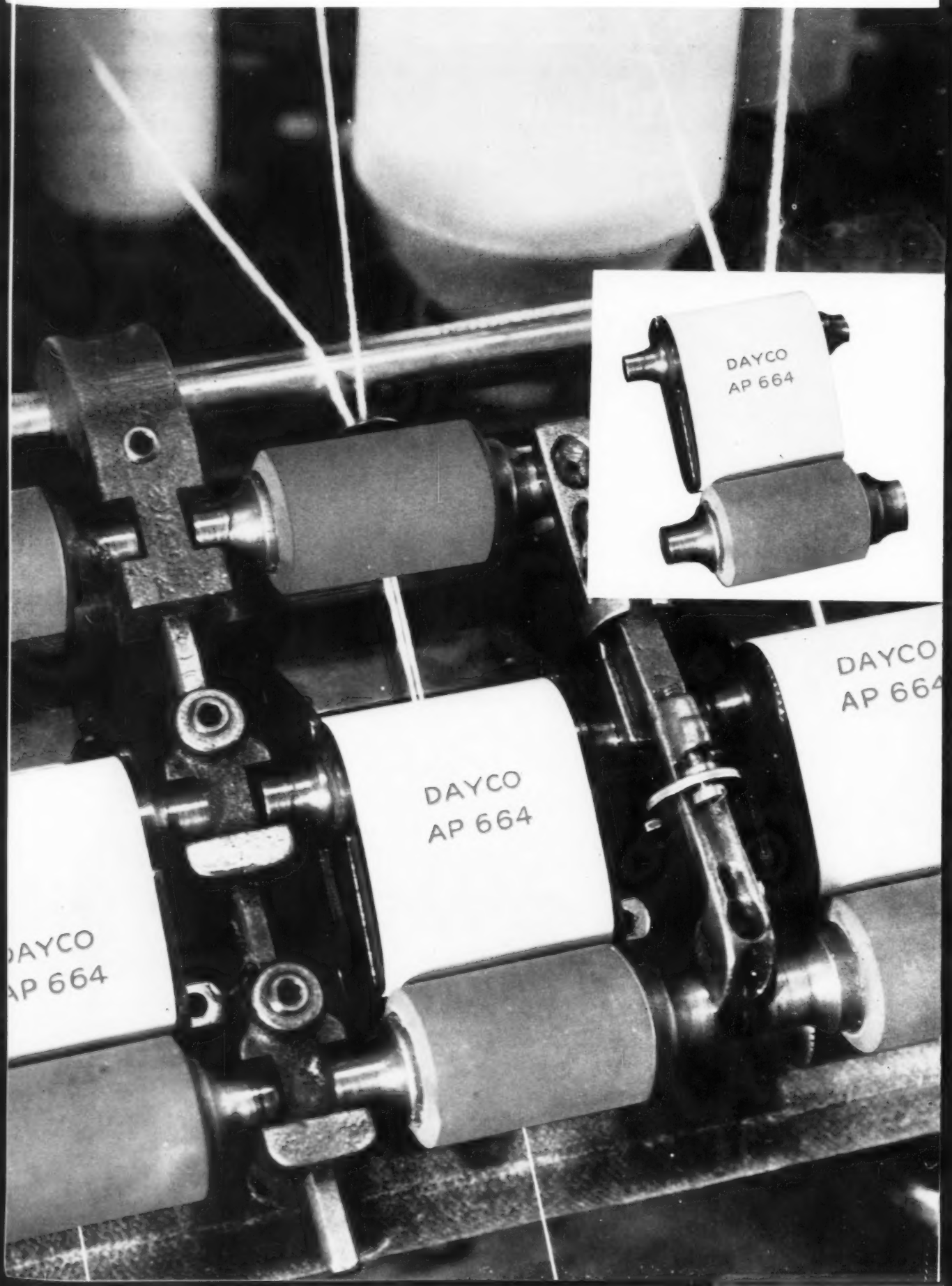
☐ "Reclaim those dollars down the drain"
☐ P-K Roto-Screen* Bulletin

*Name*_____ *Title*_____

*Company*_____

*Street Address*_____

*City*_____ *Zone*____ *State*_____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AP 664
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AP 664

Cut out lost time !

by using Dayco Cots and Aprons

PROFITS ARE MADE . . . or lost . . . right there in your drafting area. Put up with slow Monday morning starts, excessive ends down and overloaded clearer boards, and there go the profits. On the other hand, if you equip your drafting area with Dayco Aprons and Cots, you'll count out more production . . . with fewer man-hours . . . because you've eliminated the principal causes of slow-ups and down time.

FASTER START-UPS are yours with Dayco Aprons and Cots because they won't adhere to fibers . . . no matter how long you've been shut down. By the same token, they're unaffected by lubricants and oils in the natural fiber and, above all, stay dry even when the temperature and humidity get out of hand!

COUNT THE YARDS at the end of the shift and you'll be surprised at how many more you've run. Because Dayco Aprons and Cots have just the right coefficient of friction, they have a smoother, more economical drawing action that leaves all the long fibers in the yarn instead of depositing them on the clearer board. The result is stronger yarn, fewer ends down, and more yards per shift.

LONGER LIFE means that over the months, you'll find the Dayco Combination gives hundreds of hours more service. Dayco Aprons won't curl, become sticky or groove . . . won't stretch or take a permanent set. Neither will Dayco Cots pit, groove, or become glazed from hard wear. Naturally, with the longer life of the Dayco Combination, you'll save many hours of replacement time.

Take a second look at your profits and you'll want your Dayco representative to arrange a test with the Dayco Combination the next time he calls. Or write The Dayton Rubber Co., Textile Division, 401 S. C. National Bank Building, Greenville, South Carolina.

Dayton Rubber

Dayco and Thorobred Textile Products for Better Spinning and Weaving

OVERSEAS PLANT, THE DAYTON RUBBER CO. LTD., DUNDEE, SCOTLAND

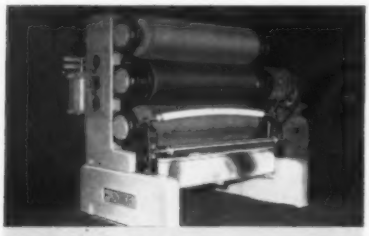
WASH 'N WEAR

HIGHER QUALITY

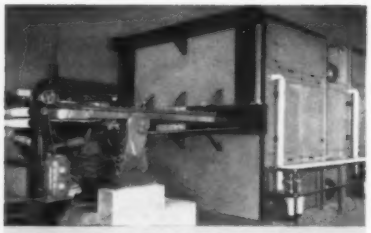
FOR BIGGER PROFITS WITH HUNTER FINISHING EQUIPMENT

Hunter equipment, specially engineered to meet the requirements of Wash-and-Wear finishing, provides the critical control necessary for quality production throughout all processes. A complete Hunter resin-finishing range . . . or individual pre-drying, drying, curing, cooling or washing equipment, designed to complement existing facilities . . . can give you an important edge on finishing costs, quality and production.

WRITE FOR THE NEW HUNTER WASH-AND-WEAR BULLETIN NOW



The Hunter 15-Ton 3-Roll Pad with 20" dia. cast iron body rolls and heavy-duty bearings for speeds up to 200 y.p.m. is adaptable to the most critical applications. A 10-Ton 2-Roll Pad, with 18" dia. rolls, delivers speeds to 150 y.p.m. Both feature individual pneumatic controls for either side of the Pad.



The Hunter VapoJet Tenter Dryer employs high-velocity super-heated steam, propelled through scientifically-arranged telescoping nozzles in close contact with the fabric. It achieves the ultimate in even drying and assures complete freedom from migration problems. Applicable to any tenter frame.

The Hunter Curing Oven, designed on modern aerodynamic principles, assures an even application of heat to both sides of the cloth, for fast, even, complete polymerization. Absolutely even temperatures are maintained at a uniform level throughout the entire length and width of the Oven.

JAMES HUNTER

JAMES HUNTER MACHINE COMPANY • NORTH ADAMS, MASS.

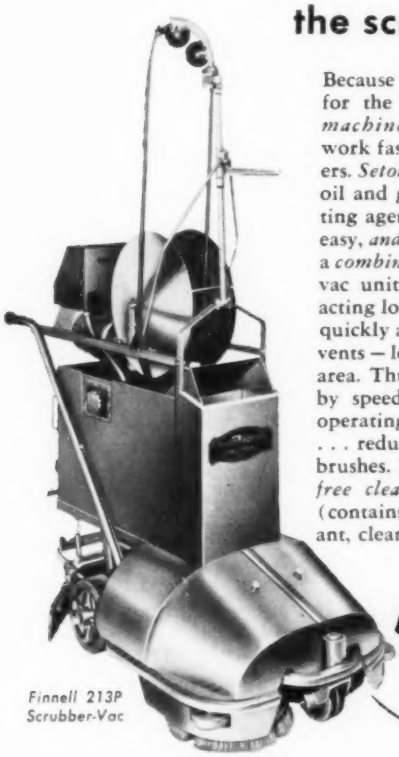
Subsidiaries: James Hunter, Incorporated, Greenville, S. C. • Hunter Fiber Machine Co., Los Angeles, California Thomas Leyland Co., Readville, Massachusetts • Hunter Controls, North Adams, Massachusetts

Member of American Textile Machinery Ass'n.

Setol Cleanser HAS WHAT IT TAKES TO MACHINE-SCRUB OILY FLOORS—

Faster cleaning action!

Cuts operating time of the scrubbing machine



Finnell 213P Scrubber-Vac

Applies cleanser, scrubs, and picks up — in ONE operation!

Because *Setol* is specially compounded for the greater speed of *combination-machine-scrubbing*, it must *and does* work faster than average alkaline cleansers. *Setol* saponifies *and emulsifies* grimy oil and grease *instantaneously*. The wetting agent in *Setol floats the oil* for fast, easy, *and thorough* removal by the vac of a *combination machine* or with a separate vac unit. And because *Setol* stays fast-acting longer—does not spend its strength quickly as do ordinary oil and grease solvents — less is required to clean a given area. Thus *Setol* saves on materials and, by speeding the cleaning process, cuts operating time of the scrubbing machine . . . reduces labor costs . . . and saves on brushes. Best of all, *Setol gets floors oil-free clean!* Also acts as a disinfectant (contains pine oil), and leaves a pleasant, clean aroma.

- **A constant, fast-acting cleanser for machine-scrubbing cement, wood, wood block, metal, stone, and terrazzo floors**
- **Consistent use on cement floors prevents cement dusting . . . provides a finish that helps seal out waste materials**

For demonstration, consultation, or literature, phone or write nearest *Finnell Branch* or Finnell System, Inc., 1311 East Street, Elkhart, Indiana. Branch Offices in all principal cities of the United States and Canada.

FINNELL SYSTEM, INC.

Originators of Power Scrubbing and Polishing Machines

Everything FINNELL for Floor Care

BRANCHES IN ALL PRINCIPAL CITIES

Lanly TEXTILE Dryers & Ovens

PLAY A MAJOR PART IN THE HEAT PROCESSING OPERATIONS of the TEXTILE INDUSTRY

STEAM • GAS • OIL and ELECTRIC HEATING

Typical Non-Woven Drying and Curing oven

Tenter dryer using high velocity air impinged on both sides of fabric to give uniform and rapid drying

Oven for curing impregnated fabrics

Conveyorized Carpet Dryer

OVENS for

- Bleaching
- Dyeing
- Curing
- Coating
- Carbonizing
- Heat or Twist Setting
- Cleaning and Annealing
- Glass Fibers
- Non-Woven Processing

Dryer Types

- Loop
- Multiple Pass
- Roller (Hot Flue)
- Tower
- Conveyor
- Tenter
- Batch

Get a LANLY Proposal

Upon receipt of information covering your needs, Lanly will submit recommendations and a proposal covering an oven or dryer that will be thoroughly guaranteed as to construction and performance.

WRITE FOR CATALOGUE 570-T

THE Lanly CO.

TEXTILE OVENS

2900 Euclid Avenue • Cleveland 15, Ohio

SOUTHERN OFFICES

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Birmingham, Ala. • Greenville, S. C. • Houston, Tex.
Memphis, Tenn.

Checking chlorine costs?

THE SECRET: ECONOMICAL SHIPPING

...first get the facts from Wyandotte

Wyandotte Chlorine is made in centrally located plants, from purified brine pumped from our own salt wells. This continuous control from the basic ingredient to economical delivery of the finished product, assures top quality and value.

Tank-car interiors are inspected after each trip. While loading, the contents are sampled and analyzed; then given a final test before shipment. And the efficient, low-cost routing of all shipments —the result of years of experience in rates, regulations, and carriers—helps you save on transportation charges and time.

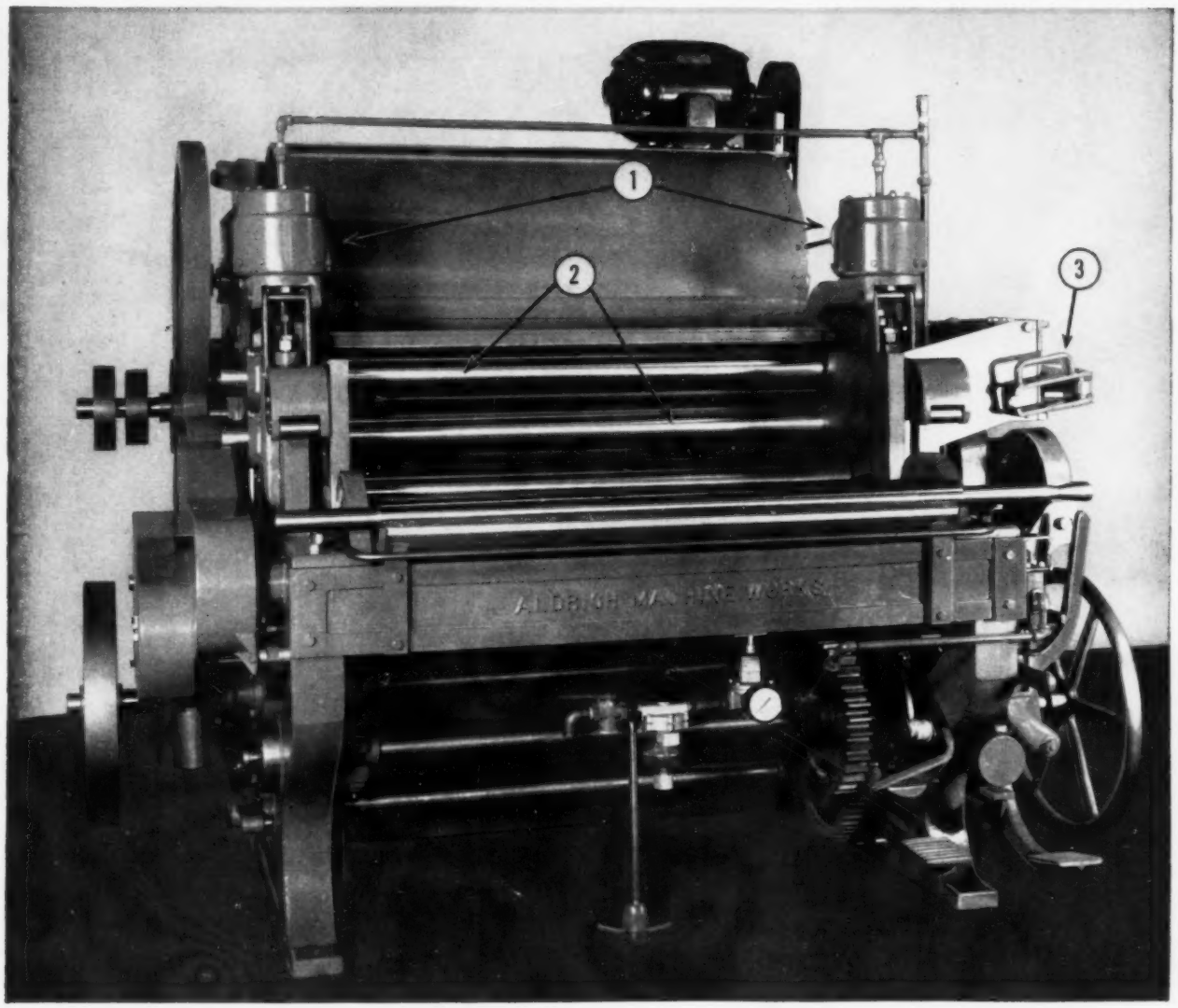
For complete product data or qualified assistance on how to best apply our products, save time and money, and increase your production efficiency, call our expert technical staff for qualified assistance, or write: *Section TI, Wyandotte Chemicals Corporation, Wyandotte, Michigan. Offices in principal cities.*

Wyandotte CHEMICALS

WYANDOTTE CHEMICALS

MICHIGAN ALKALI DIVISION

The ALDRICH HIGH COMPRESSION CALENDER



1 Diaphragm air cylinders, having neither pistons nor stuffing boxes, apply resilient pressure up to 12,000 pounds upon the calender rolls. Resilient pressure gives more uniform calendering, and protects the calender from shock loads. All pressure is released *each* time the calender stops, and is instantly applied when it starts.

2 Meehanite calender rolls, stronger and smoother than grey iron, are carried on roller bearings which fit standard roll necks. The special mountings for these bearings keep the rolls perfectly aligned at all times. This is *very* important where more than three times the usual pressure is applied to the rolls.

3 Pneumatic Lap Pin Extractor exerts a pull of 800 pounds to remove the pin from the tightest lap.

AldricH MachinE WorkS
Greenwood, South Carolina

I DON'T MIND BEING ALL WET . . . MY WASH AND WEARS ARE FINISHED WITH SEYCOSET*

USE THESE SEYCO RESINS

SEYCOSET ER

A complete water soluble cyclic ethylene urea monomer producing:

1. High crease angles with excellent dimensional stability and durability.
2. Complete compatibility with durable water repellents and with both UF and/or melamine type resins.
3. Excellent durable glazed and embossed effects.
4. Low chlorine retention.

SEYCOSET RESIN 65

A modified urea formaldehyde monomer resin imparting durable crease resistance and dimensional stability to cotton, viscose, or viscose/acetate blended fabrics.
Used with water repellents, gives extra crease and crush resistance and better fastness to washing.
Addition of SEYCOSET RESIN 65 to high cost, low chlorine retentive resins affords means of lowering costs.
Excellent storage stability.

SEYCOSET SYRUP RESIN

A complete water dispersible, highly polymerized modified urea formaldehyde resin, affording the following durable characteristics: body, fullness, dimensional stability.
Applied with starches and modified starches, improves resistance to washing and dusting.
Used with ethylene urea type resins, SEYCOSET SYRUP RESIN may be used to build and improve hand and durability.
Increased abrasion resistance obtained when used with various thermosetting resins.
Improve crispness of nylon and synthetic mesh fabrics.

SEYCOSET CREAM RESIN

A urea formaldehyde monomer which imparts crease resistance and dimensional stability to cellulose fabrics.
Applied in conjunction with a syrup resin and a low-cost durable water repellent, SEYCOSET CREAM RESIN affords an economical finish for suiting, rainwear apparel and outerwear fabrics.
Can be applied to cotton, viscose, acetate, or blends of these fabrics.

*Call Your Seyco Salesman For Softeners and Detergents For All Your Wash And Wear Fabrics

Headquarters for textile chemicals

SEYDEL-WOOLLEY & CO.

748 RICE STREET, ATLANTA, GEORGIA

SEYCO

She'll change from shopper

MEAD·ATLA

Make a good first impression . . . with a Mead-Atlanta Carton! All your years of experience, production techniques, quality control, advertising, and market research, point toward one short moment . . . that second when the shopper meets your product. Will she buy? Or will she ask to "see something else"? The answer's in your package! You're safe . . . if your package is made by Mead-Atlanta, where packaging is advertising. Creative package designers: brilliant art teams: rotogravure, letterpress, flexographic, and lithographic high speed presses;

to buyer...when you use a NTA CARTON!

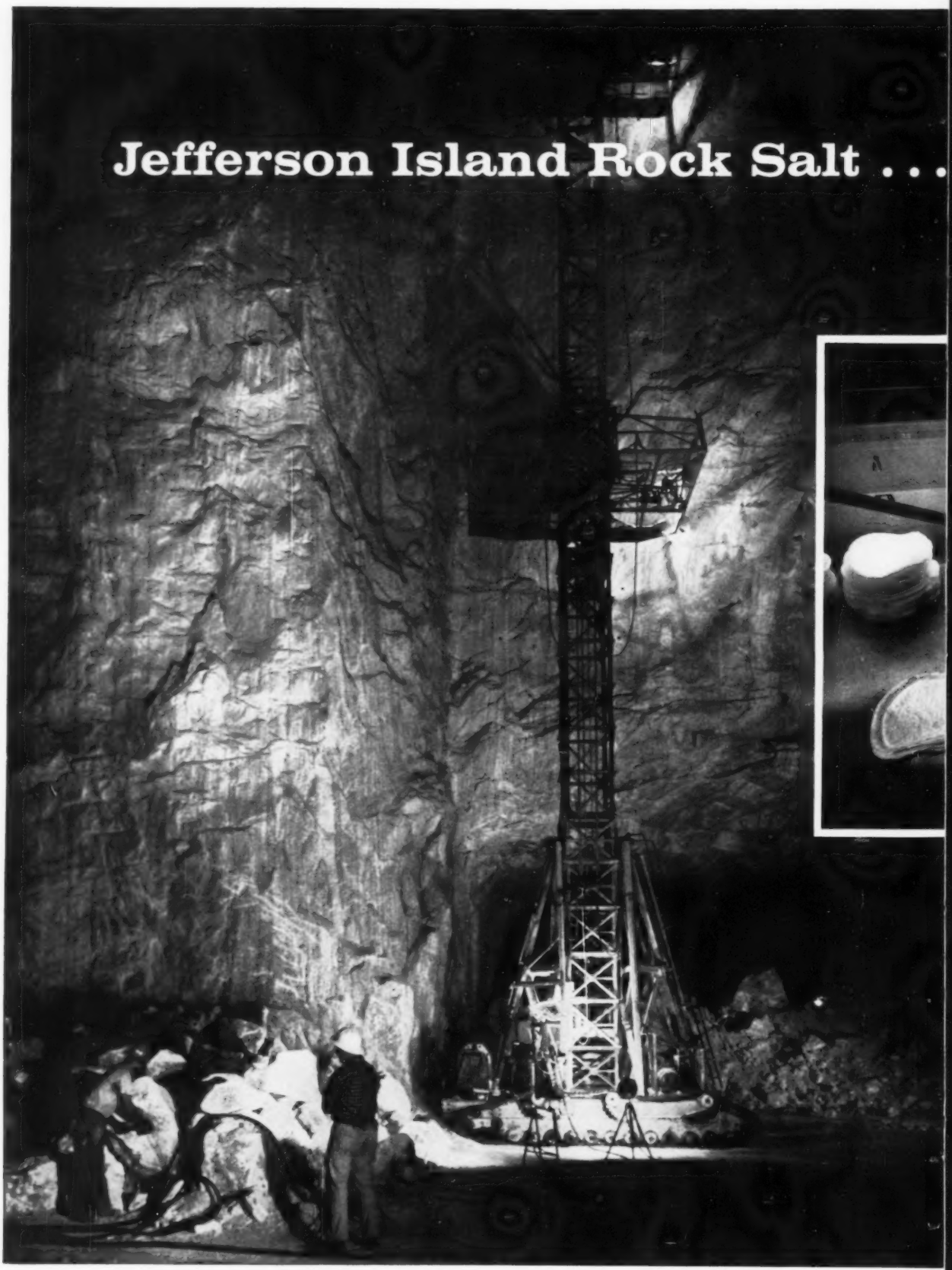
all these contribute to Mead-Atlanta leadership. Service? Mead-Atlanta sales offices, warehousing and distribution facilities blanket the heart of the textile industry. For service, economy and for sales appeal — you can not afford to use less than Mead-Atlanta Cartons.

MEAD·ATLANTA PAPER COMPANY

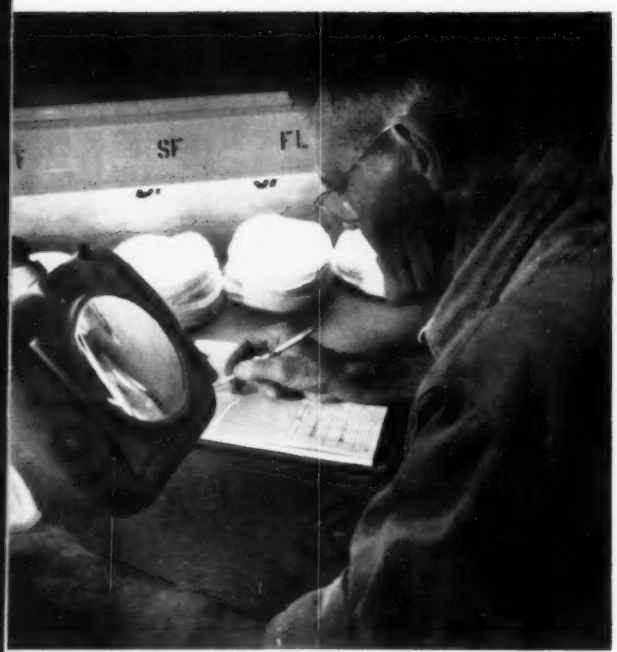
P. O. BOX 4417 • ATLANTA 2, GEORGIA

Regional Offices: Atlanta, Chicago, New York, Memphis, Los Angeles • *Sales Offices* in all principal cities. Consult your yellow pages.

MEAD packaging


Jefferson Island Rock Salt . . .

.. so pure that every textile user benefits



Diamond Crystal pays particular attention to the elimination of insoluble matter. Filter pads are run every 40 minutes under Diamond's quality control . . . thus assuring uniform high purity.

For many years, rock salt from JEFFERSON ISLAND has made possible many economies in dyeing textiles.

Mined in Louisiana from one of the world's purest deposits, this rock salt for brine baths results in your products being consistently better. The big story is up to 99% purity at the source.

TWO GREAT NAMES MERGE AS ONE

Recently, the Jefferson Island Salt Co. merged with Diamond Crystal, a company known for more than 70 years as a quality producer of flake and granular salt. For example—they are the leading supplier of salt to high quality food processors.

INHERENT PURITY—KEY TO COST SAVINGS

Inherent purity in Diamond Crystal salt is a major factor in all industries. For instance, textile plants can use rock salt from Jefferson Island *without* costly side reactions caused by impurities.

And high purity CMF (calcium magnesium free) replaces Glauber's and common salt to produce higher quality textile products.

For immediate service and consultation on your salt problem, call the nearest Diamond Crystal sales office. Or write for the information booklet "Salt in Industry", to the Jefferson Island Salt Div., Diamond Crystal Salt Co., St. Clair, Mich.

DIAMOND CRYSTAL SALT

SALES OFFICES: CHARLOTTE, ATLANTA, NEW ORLEANS, LOUISVILLE, BOSTON, NEW YORK, AKRON, DETROIT, CHICAGO, MINNEAPOLIS

PLANTS: AKRON, OHIO . . . JEFFERSON ISLAND, LA. . . ST. CLAIR, MICH.

BRIGHTER LIFE AHEAD

for Nylon with **NEW** Nylomine dyestuffs by AHCO

You can look for brighter nylon yarns and fabrics with new NYLOMINE dyestuffs by AHCO.

NYLOMINE dyes produce a wide range of outstandingly brilliant shades — shades which have good wet fastness and excellent fastness to light.

NYLOMINE dyes possess excellent building-up properties.

NYLOMINE dyes are easy to apply.

Nylomine

- Yellow GS
- Orange GS
- Brown B
- Scarlet B
- Red 2BS
- Blue GS
- Blue R
- Dark Blue B
- Black BS

DYE on loose fibers, slubbing, yarn or piece goods.

PRINT on Nylon

Ask for more information from your AHCO representative.

AHCO DYES

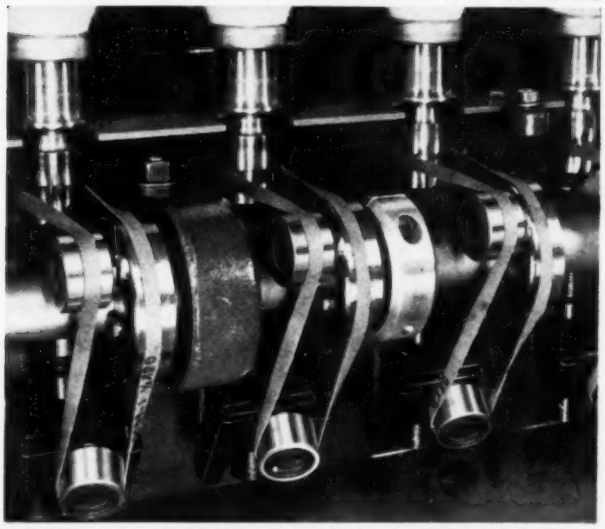
ARNOLD, HOFFMAN

Providence, Rhode Island
Arnold, Hoffman & Co., Inc.
Est. 1815
A Subsidiary of Imperial Chemical Industries, Limited, England

The word Nylomine is a trademark, the property of Imperial Chemical Industries, Limited, England

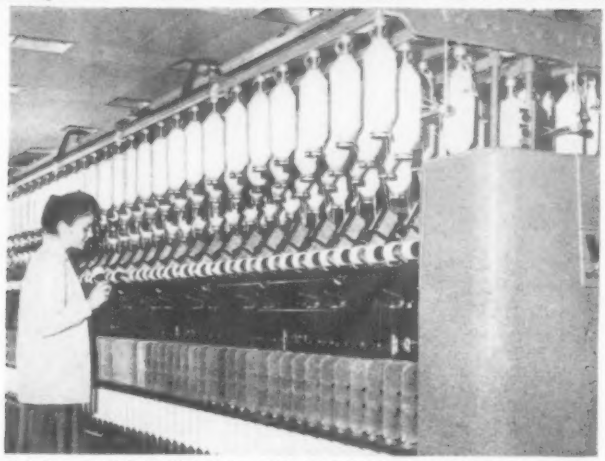
480-B

WHITIN AND FAFNIR—PARTNERS IN PROGRESS 35 YEARS



Close-up of Whitin Piedmont's spindles, with drive cover removed, showing individual belt drives.

UNIQUE SPINDLE DRIVE ON NEW WHITIN PIEDMONT IS FAFNIR-EQUIPPED FOR HIGH SPEEDS, LOW UPKEEP



Piedmont machine in operation. Features include "straight line" spinning, latest Whitin Super-Draft, scientific balloon control system, compact 27" width.

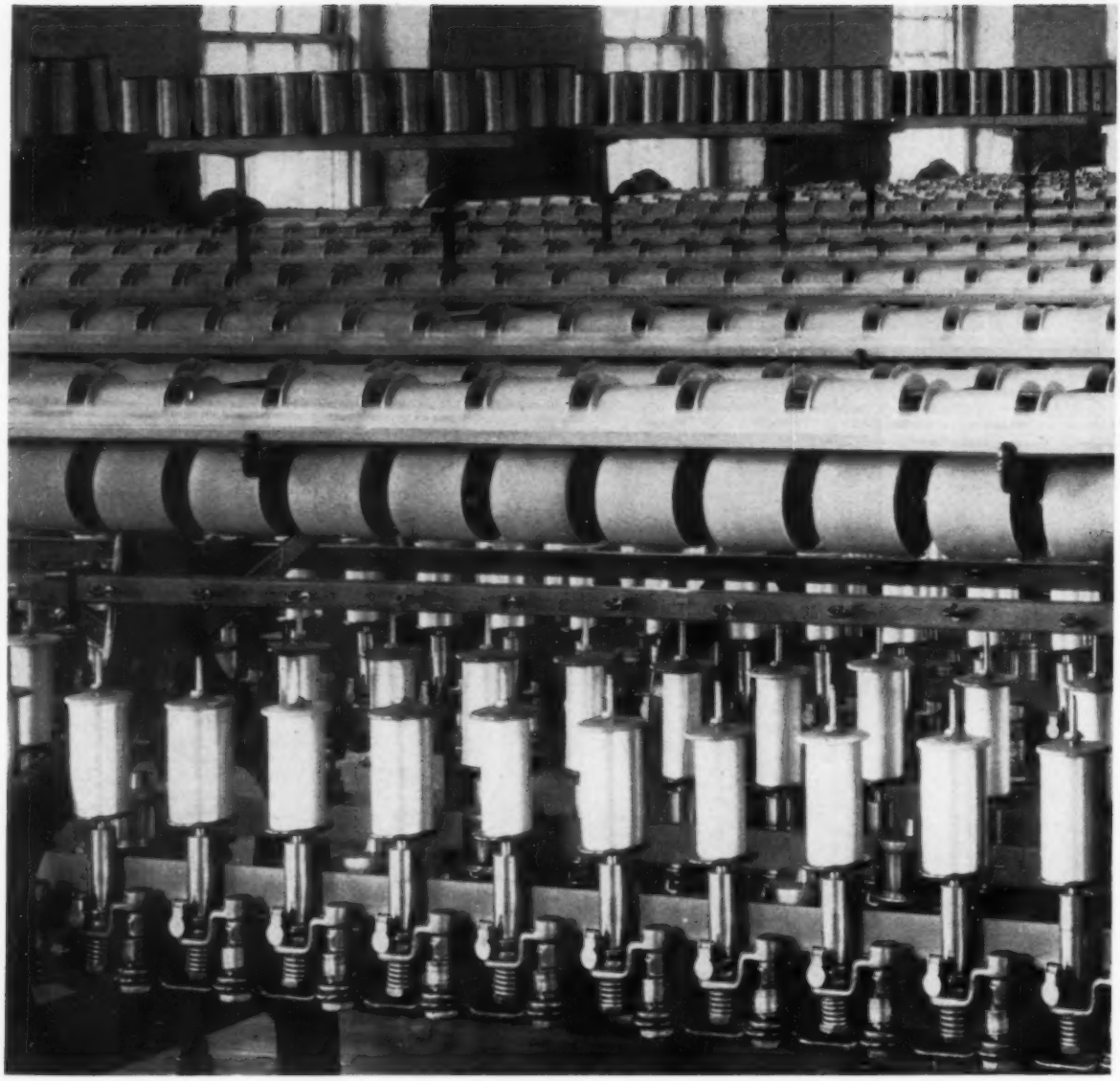
675 FAFNIR BALL BEARINGS DESIGNED INTO NEW SPINNING FRAME

Individual belt drives for each spindle are the outstanding design feature of Whitin's new Piedmont Spinning Frame. The unique construction affords more uniform, high-speed spindle operation while eliminating windage problems. The design also permits a fully enclosed drive, for cleaner spinning. ✓ ✓ ✓ Among some 675* Fafnir ball bearings specified for the new frame are 576 prelubricated and shielded spindle belt idler bearings. Fifty prelubricated Fafnirs with Mechani-Seals are used for the drive shafts. In addition to permitting higher speeds, these Fafnir ball bearings virtually eliminate maintenance. Contaminants are sealed out; lubricant sealed in. ✓ ✓ ✓ Emphasis on antifriction design pays off in performance too. **Components are so nicely balanced that the whole frame can be turned easily by hand—even with the machine in fully-loaded, ready-to-go condition!** Convincing evidence of precise, economical operation. Evidence, too, of how "the Fafnir touch" can smooth the going when design reaches turning points. Worth bearing in mind. The Fafnir Bearing Company, New Britain, Connecticut.

*On 288-spindle frame

Fafnir Double-Shielded Spindle Belt Idlers (top) and Mechani-Seal Drive Shaft Ball Bearings (center) used in Whitin Piedmont. Ball bearings with Plya-Seals, contact type (bottom), are specified for head end gearing...offer best protection yet against foreign matter, loss of lubricant.

FAFNIR
BALL BEARINGS
Most Complete Line in America



Three generations of lubrication experience

Today's complex textile machinery is being designed for more precise operation than ever before. Precise *lubrication*—the *right* lubricant at the *right* spot—by the same token becomes increasingly important . . . in fact, *vital* to full realization of your machinery's full output potential.

Precise lubrication has been the purpose and function of Standard Oil lubricants in the textile industry for over 70 years. Standard Oil's experience is backed by the world's largest facilities for petroleum research and testing . . . unmatched resources for producing a steady flow of product improvements and new lubrication techniques —better, more *precise* lubrication for the textile industry.

Call in a Standard Oil lubrication specialist today . . . He'll be glad to go over your equipment and lay out a plan that will insure *precise, profitable* lubrication throughout your plant.

STANDARD OIL
LUBRICANTS

STANDARD OIL COMPANY
(KENTUCKY)

Si

". . .we'll just have to call Si back from his vacation—his replacement's blown another fuse. . . !"

The time may come when a robot can run your slashers, but no robot can take the place of Seyco service.

That only comes from experience.

And we have 34 years of it.

Try us for size; try us for service; fortunately we have both.

Warp Sizing: *Softeners, Binders, Penetrants, Ty-In Penetrants, Shuttle Dressing, Waxes.*

Wet Processing Chemicals and Auxiliaries: *Dye Assistants, Penetrants, Rewetting Agents, Sanforized Fabric Oils, Detergents, Scouring Agents, Softeners.*

Niagara Twist-Setter: *Yarn Conditioning Penetrants.*

Seyco Warp Lubricator.

Headquarters for textile chemicals

SEYDEL-WOOLLEY & CO.

SEYCO

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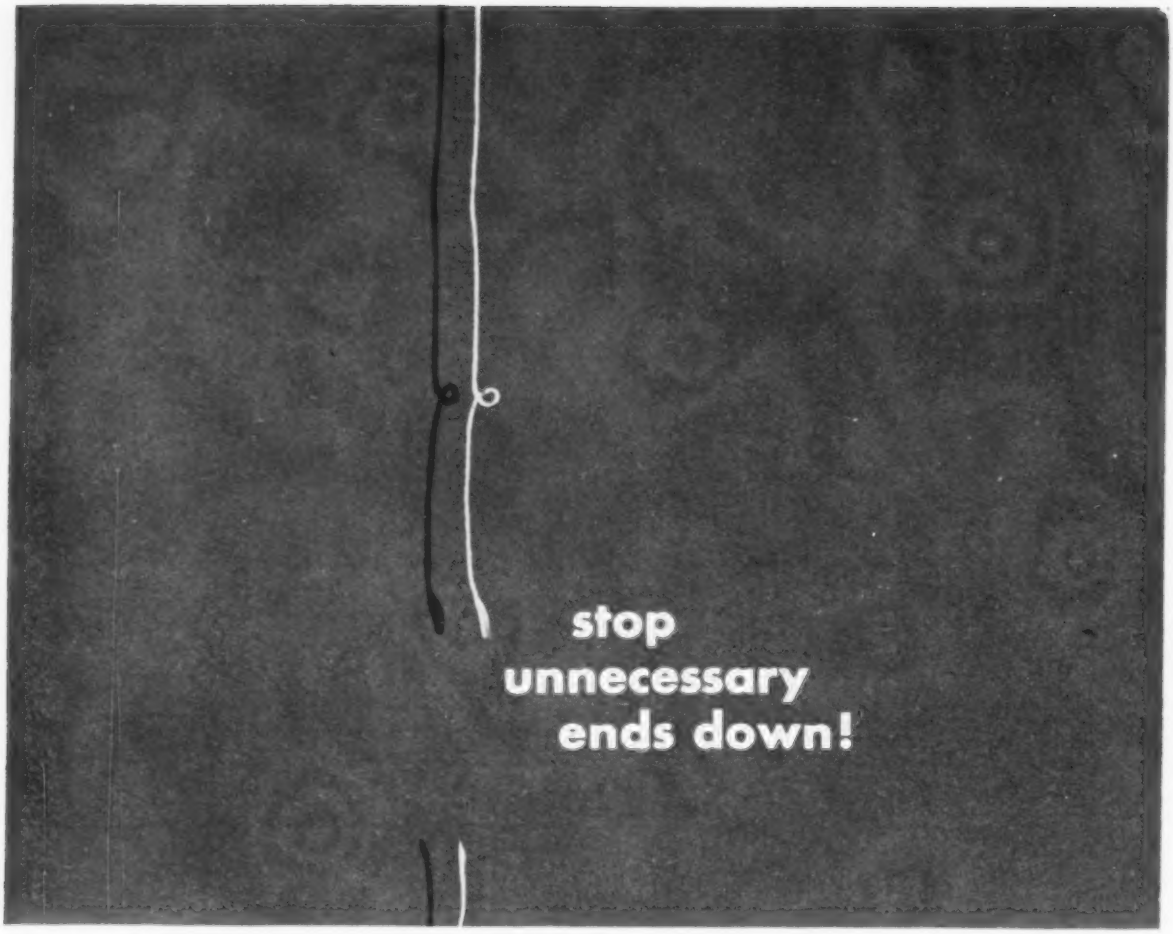

Here's How Carter's Quality Control Program Insures Smooth Running!

THE BEST . . . is the single quality standard that raw materials, manufacturing processes, inspection, packaging and delivery must meet before CARTER TRAVELERS reach you. A rigid quality control program supervised by our own large, modern metallurgical laboratory protects this standard — assures you of dependable performance.

Absolutely uniform in weight, temper and shape—as near perfect as modern science, skilled technicians and precision machinery can make them—CARTER TRAVELERS are today's *best* insurance buy for smooth running work.

REPRESENTATIVES

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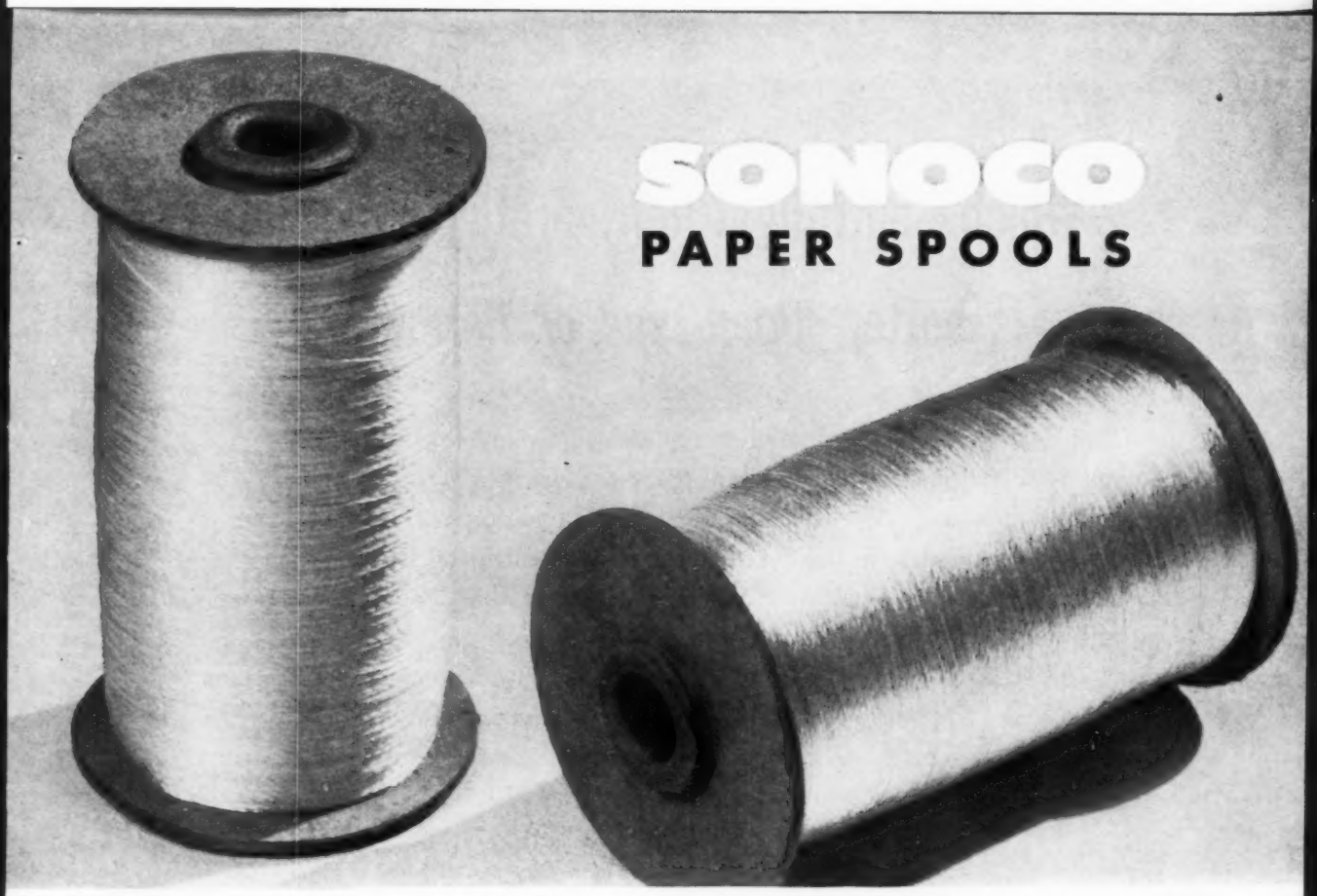
Carter
TRAVELER COMPANY

DIVISION OF A.B. CARTER, INC. MANUFACTURERS OF THE BOYCE WEAVERS KNOTTER GASTONIA, NORTH CAROLINA

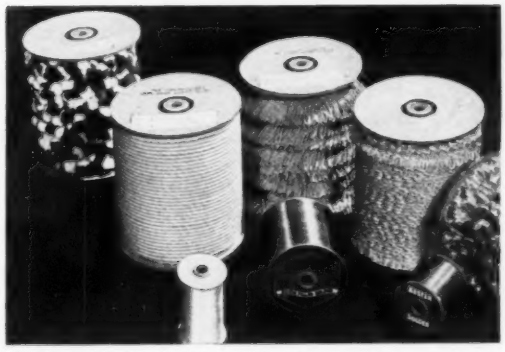


...combine economy with low cost!

There is a vast difference between economy and low cost.

Sonoco double-head spools are made to give you both, but their economy in the long run far exceeds any cost advantage at the start. That is because all Sonoco spools are engineered for the job *first* and then produced at the lowest cost possible.

If your job requirements can be met with Sonoco standard spools, you have a wide range of sizes and types to choose from. If you require a custom made spool, Sonoco can design and produce one to your specifications. If a low cost paper spool can do the job, Sonoco can make it. Both standard and custom spools are produced under quality controlled conditions from raw material to finished product, guaranteeing uniformity and production economy in use.



Widely used for packaging: tape . . . braid . . . fringe . . . thread . . yarn . . . wire . . . rope . . . binding . . . gimp . . . etc.

For quotations, send sample or specify length of traverse, head, bore and barrel diameters.

SONOCO

Products for Textiles

SONOCO PRODUCTS COMPANY

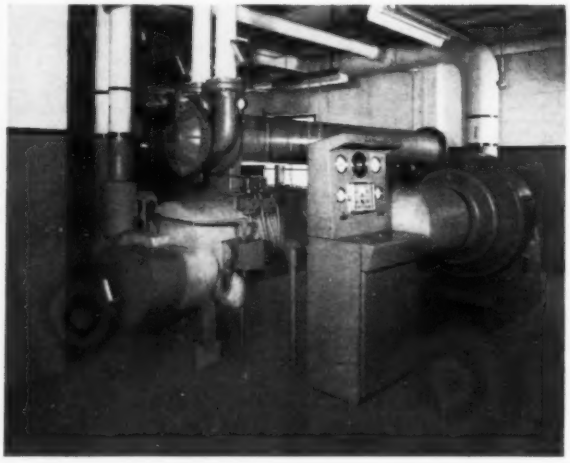
Main Office - HARTSVILLE, S. C. • MYSTIC, CONN. • AKRON, IND. • LOWELL, MASS. • PHILLIPSBURG, N. J. • LONGVIEW, TEXAS • PHILADELPHIA, PA. • LA PUENTE, CAL. • ATLANTA, GA. • GRANBY, QUEBEC • BRANTFORD, ONTARIO • MEXICO, D. F.

1745

Which Centrifugal Refrigerating Machine is better—*Open-type or Hermetic?*

That depends on your source of energy and your requirements—whether you need refrigeration for air conditioning or processing, whether you use steam or electricity, whether your load is large or small. Carrier is the acknowledged leader in the development of the Centrifugal Refrigerating Machine. Both Open-type and Hermetic are shown below. Each provides unique advantages under specific conditions. Each has been proved practical and dependable in installation after installation. With a complete refrigeration line, Carrier engineers are in position to recommend the best solution for your requirements. For information, call your nearest Carrier office or write Carrier Corporation, Syracuse, New York.

For use with any drive on applications requiring temperatures from normal to 200° below zero, and for high lift, Carrier Open-type Centrifugals offer many advantages. With capacities up to 4000 tons or more, these heavy-duty machines provide accurate, constant, automatic control of conditions in the largest installations. Thousands have been giving dependable service and scoring top performance records for decades on applications of every size all over the world.



For use with built-in motor on applications normal to air conditioning and process liquid cooling, Carrier Hermetic Centrifugals may be the answer. Their capacities range from 90 to 1100 tons. Light in weight and compact, these Carrier Centrifugals are the only hermetics with such advanced features as refrigerant-cooled motors through the entire capacity range, hydraulic-powered capacity vanes and electronic self-contained controls for completely automatic operation.

AIR CONDITIONING · REFRIGERATION Carrier

Here you can see why

Nacconol® SL

is the largest-selling liquid textile detergent

Cleanliness, clarity and pale color of NACCONOL SL are dramatically apparent as it flows through glass pipeline systems.

And it keeps its color and clarity without separating . . . even at low temperatures.

Whether you pump NACCONOL SL through pipelines or pour it from the drum, it is always easy to handle, eliminates dissolving, minimizes waste.

NACCONOL SL is a better money-value, too, since it gives you more cleaning power per dollar on an active ingredient basis.

A sample will convince you to join the long list of mills that have made NACCONOL SL the best-seller in the textile industry. Get your test-sample from our nearest office.

NATIONAL ANILINE DIVISION

40 RECTOR STREET, NEW YORK 6, N. Y.

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New Orleans Philadelphia Portland, Ore. Providence San Francisco

Allied Chemical

PREPARATORY

Bale Breaker Feeds
Oiling Systems
Pickers
Shredders
Condensers
Stock Conveying Systems
Willows

BLENDING

Automatic Blending Systems
Blending Feeds
Patented Roller Distributor

YOU'LL FIND

PROCTOR EQUIPMENT

ON-THE-JOB FROM FIBER TO FABRIC

For more than 75 years, PROCTOR has held the leadership in the manufacture of dependable textile machinery. PROCTOR's advances in ever-new, ever-improved equipment have been prominent in an ever-expanding industry. In the processing of print goods, knit goods, tufted and woven carpets, non-woven fabrics, natural and synthetic fibers . . . you'll find the name PROCTOR on equipment used in these all important textile operations.

CARDING

Synthetic Cards
Woolen Cards
Worsted Cards
Jute Waste Cards
Non-woven Web Forming Equipment
Card Feeds
Intermediate Feeds
Can Coilers
Balling Heads
Garnetts—Batt & Reprocessed Fiber
Automatic Batt Making Systems
Bi-Temp Metallic Wire

FINISHING

Con-o-matic Washers
Open-width Continuous Bleach Ranges
Continuous Bleach Ranges for Tubular Knit
Tenter Housings
Multi-pass Air-lay Dryers
Nylon Setters
Equipment for Redmanized® "Shrunk-to-fit" Fabrics
Loop Dryer-Curers
Roller Dryer-Curers
Squeeze Rolls
Stock Dryers
Slasher Dryers
Yarn Dryers
Non-woven Fabric Dryers & Curers
Carpet Dryers

Investigate the advantages of PROCTOR equipment in your process. Consult a PROCTOR engineer, trained and experienced in all phases of natural and synthetic textile processing.

Proctor®

PROCTOR & SCHWARTZ, INC.
PHILADELPHIA 20, PA.

THE NAMES TO REMEMBER IN RUBBER-COVERED ROLLS—

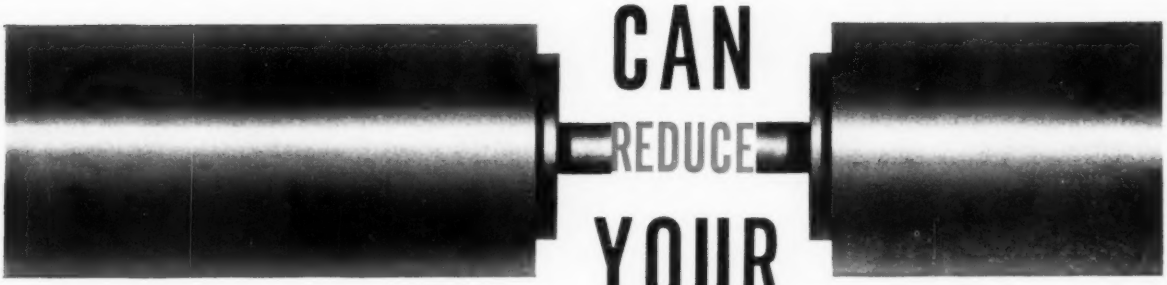
MICROROK® . . . for uniform extraction and penetration, plus very long life

PRESTOW® . . . for squeeze and other roll applications where durability is important

CRYSLER-SECTIONAL . . . for outstanding service in fulling and scouring

LEVEL-NIP . . . for exceptional uniformity of work produced by top dye pad rolls

YOU CAN REDUCE YOUR COST



. . . you can process more yards per penny spent for rolls IF you will use the **S-W ROLL-GUARD Plan.**

We invite you to make your local S-W representative prove this in your mill, on your machinery, this month.

STOWE-WOODWARD, INC. Griffin, Georgia · Newton Upper Falls, Mass. · Neenah, Wisconsin

Checked your caustic costs lately?

. . . upon request, a Wyandotte technical-service man will survey your requirements — help you decide if a switch from 50% to 74% caustic is economical

An increase in your caustic requirements, or a change in freight rates can alter your economic position almost overnight in regard to 50% or 74% concentrations. That's why it's wise to check your caustic costs periodically.

Here's an easy way to check: first, using the chart on the opposite page, plot your position in terms of annual requirements and freight rates to see if a saving is possible by switching to 74% caustic (send for Wyandotte's handy free guide, "74% or 50% caustic soda, which for you?" for more complete details). Then, with a basic understanding of your economic position, call in a Wyandotte technical-service man. Together you can analyze all the factors: the cost of concentration; end use of the caustic soda; existing storage and handling facilities; quantity of caustic consumed; plant location.

The results may reveal no savings at all by switching to 74% liquor, or you could save thousands of dollars. In either case, the assistance of a technically trained Wyandotte representative with his familiarity in all phases of caustic soda storage, handling, and uses is at your disposal . . . and there's no obligation. Get in touch with us today. *Wyandotte Chemicals Corporation, Michigan Alkali Division, Wyandotte, Michigan. Offices in principal cities.*

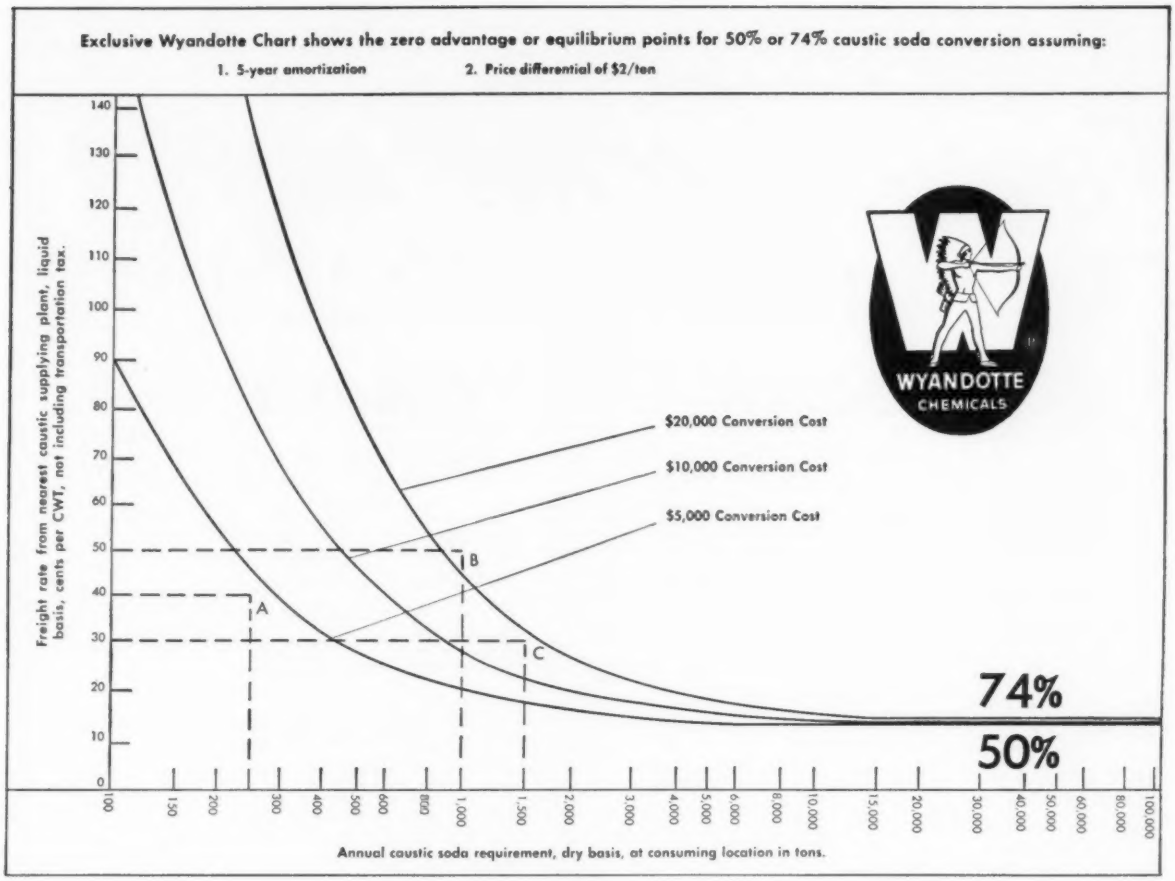
Wyandotte CHEMICALS

MICHIGAN ALKALI DIVISION

PACING PROGRESS WITH CREATIVE CHEMISTRY

1 After plotting your economic position on Wyandotte chart, call in your Wyandotte technical-service man. This study may bring to light savings of thousands of dollars in freight charges by changing to 74% liquor.

2 Wyandotte engineers — with broad experience in applications of caustic soda and the correct equipment for its proper handling — assist in designing heat exchangers, cooling tower piping, storage tanks, and materials of construction.


Exclusive Wyandotte Chart shows the zero advantage or equilibrium points for 50% or 74% caustic soda conversion assuming:
1. 5-year amortization
2. Price differential of $2/ton
Freight rate from nearest caustic supplying plant, liquid basis, cents per CWT, not including transportation tax.
$20,000 Conversion Cost
$10,000 Conversion Cost
$5,000 Conversion Cost
A
B
C
74%
50%
WYANDOTTE CHEMICALS
Annual caustic soda requirement, dry basis, at consuming location in tons.

HOW TO USE CHART

EXAMPLE A: Freight from nearest producing point to consuming point is 40 cents per hundredweight. Annual consumption by consuming plant is 250 tons caustic soda, dry basis.

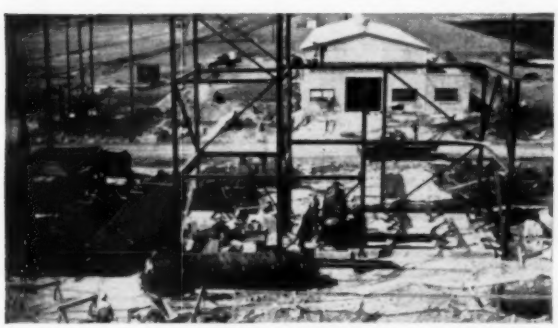
ANSWER: Because Point A lies to the left of the curves, the plant should purchase caustic soda as a 50% liquid.

EXAMPLE B: Freight from nearest producing point to consuming point is 50 cents per hundredweight. Annual consumption by consuming plant is 1000 tons caustic soda, dry basis.

ANSWER: Because Point B lies to the right of the curves, the plant should purchase caustic soda as a 74% liquid, even though additional equipment investment of as much as $20,000 might be found necessary.

EXAMPLE C: Freight from nearest producing point to consuming point is 30 cents per hundredweight. Annual consumption by consuming plant is 1500 tons caustic soda, dry basis.

ANSWER: Because Point C lies between the $10,000 curve and the $20,000 curve, the plant should purchase 50% caustic soda if the additional investment necessary exceeds about $15,000, or should purchase 74% caustic soda if the additional investment is less than about $15,000.



3 When construction problems arise, such as the location of equipment for most efficient operation or more economical installation . . . alternate valves or new materials of construction . . . the Wyandotte technical-service man is available for advice.

4 The Wyandotte technical-service man is on hand to help unload the first tank car of 74% caustic . . . seeing that the outlet leg is properly steamed, diluting water correctly proportioned, temperature controlled, safety precautions followed.

Colgate

SURFACE ACTIVE AGENTS

Have Many Uses In Textile Wet Processing

COLGATE

ARCTIC SYNTEX 036

A 100% Liquid Non-Ionic Surface Active Agent. For Use Where An Efficient, Economical Cleaning, Scouring, Wetting, Penetrating and Emulsifying Agent Is Needed.

Compatible with anionic, cationic and other non-ionic chemical substances, ARCTIC SYNTEX 036 is not inactivated by acids, alkalies, oxidizing or reducing agents; or by most organic ions. Stable for long periods at high temperatures. Will not form salts with metal ions. Very effective at low concentrations. Stable and effective in both hard and soft water.

CHEMICAL ANALYSIS:

	Per cent as received
Active Ingredient	99+
Moisture	0.5 max.
Ash Content	0.1 max.

STABILITY:

Hard Water	Unaffected
Metal Salts	Unaffected
Alkalies	Unaffected
Acids	Unaffected
Oxidizing & Reducing Agents	Unaffected

Recommended For Use In Textile Processes or Compounds: (1) Where emulsification and removal of oil and grease are desired or are problems. (2) In acid or alkaline solutions where other surface active agents may be inactivated. (3) In hard water or solutions of metal salts. (4) In combination with other anionic and cationic agents and other surface active or nonsurface active agents.

COLGATE

MENTOR BEADS

Heavy Gravity 60-lb. Bags

Low Density 30-lb. Bags

Spray Dried Neutral Alkyl Aryl Synthetic Detergent. Provides Excellent Wetting, Penetrating, Foaming and Dispersing Properties in Hot or Cold, Hard, Soft, Alkaline or Acid Waters.

A high-molecular-weight alkyl aryl sulphonate-type detergent, MENTOR BEADS has many uses in textile processing including: Wetting Out, Desizing, Kier Boiling, Degumming, Rayon "Boil Off," Bleaching, Fulling, Scouring, Dyeing, Washing After Dyeing, Print Washing, Finishing, Softening, Etc.

CHEMICAL ANALYSIS:

Active Ingredient		40.0%
Moisture		2.5%
Density or Apparent Gravity	Average Light	.20
	Average Heavy	.40

STABILITY:

Hard Water	Clear up to 550 ppm hardness
Acid—Boiling .25% in Sol. of pH-1	Stable after 5 hrs.
Alkali—Boiling .25% in Sol. of pH-13	Stable after 6 hrs.
Boiling Water	Stable
Atmospheric Oxidation	Stable

More Technical Service Available

Our enlarged Technical Service staff will be happy to help you solve your soap and synthetic detergent application problems. Write the Colgate-Palmolive Company Associated Products Dept.

COLGATE-PALMOLIVE CO. CP QUALITY PRODUCTS SINCE 1806

COLGATE-PALMOLIVE COMPANY
300 Park Avenue, New York 22, N. Y.

OIL IS SUPPLIED TO BOTH TOP AND CONICAL BEARING SURFACES THROUGH SEAMS.
LESS OIL IS NEEDED.
TRAVELER DISTRIBUTES OIL.
OIL FLOWS TO ANNULAR RESERVOIR WITHIN THE RING, THEN IS DRAWN BY CAPILLARY ACTION THROUGH SEAMS.

New..."M" type HERR Conical Ring

better lubrication with less oil

SEAM LUBRICATION. A new idea . . . utilizes the principle of capillary attraction to provide more uniform lubrication than has been possible in the past. It is the outstanding feature of the new "M" type ring.

SEVERAL YEARS EXPERIENCE IN SOME OF THE LARGEST TEXTILE PLANTS HAVE ESTABLISHED THE BENEFITS OF THIS RING.

1. **LESS OIL IS USED IN THIS NEW "M" TYPE RING** because no oil is wasted. It all goes to the bearing surfaces of the ring through the seams.
2. **TRAVELERS LAST LONGER.** As a matter of experience in mills which have been using "M" rings for the past three years, the uniformity of lubrication increases traveler life.
3. **RINGS LAST YEARS LONGER.** High speed operation for years has established the superiority of the new design.
4. **CLEANER YARN.** With better oil distribution and no leakage, mills are getting cleaner yarns.
5. **FASTER OPERATION.** Speed-up is possible without extra wear to ring and traveler. The traveler receives oil from the lubricating seams over the complete bearing surfaces of the ring.
6. **REDUCES YARN BREAKAGE.** As in all Herr Conical Rings, tension is automatically adjusted by the action of the traveler and conical design of the ring.

Write today — get facts that will make new profits possible.

The $5\frac{1}{2}$" diameter $4\frac{3}{64}$" face Herr Conical Ring requires only one oil cup.

HERR® MANUFACTURING CO., INC.

310 FRANKLIN STREET • BUFFALO 2, N. Y.

FOR SPINNING AND TWISTING WORSTED, WOOLEN, RAYON NYLON ORLON, FIBERGLASS AND BLENDED YARNS OF ALL TYPES

MAKE YOUR BALING A *Profitable* OPERATION

with dependable

LOGEMANN BALING PRESSES

Open balers for finished goods may be hydraulic or power-driven. Give platen dimensions required, maximum height of pile to be compressed, number of bales per hour, when requesting information on open balers.

Tell Us Your Baling Problems

That's the best way to get the right answers to low-cost time-saving baling. During our sixty years of building balers for the textile industry we've solved many a baling problem for mill owners. Our engineers know how to make baling operations pay their own way in time and labor-savings, in speedier, more reliable handling of bales, in lower maintenance cost. Many Logemann balers have been in profitable operation since the turn of the century—evidence of the ruggedness, durability, and long service life of Logemann baling presses.

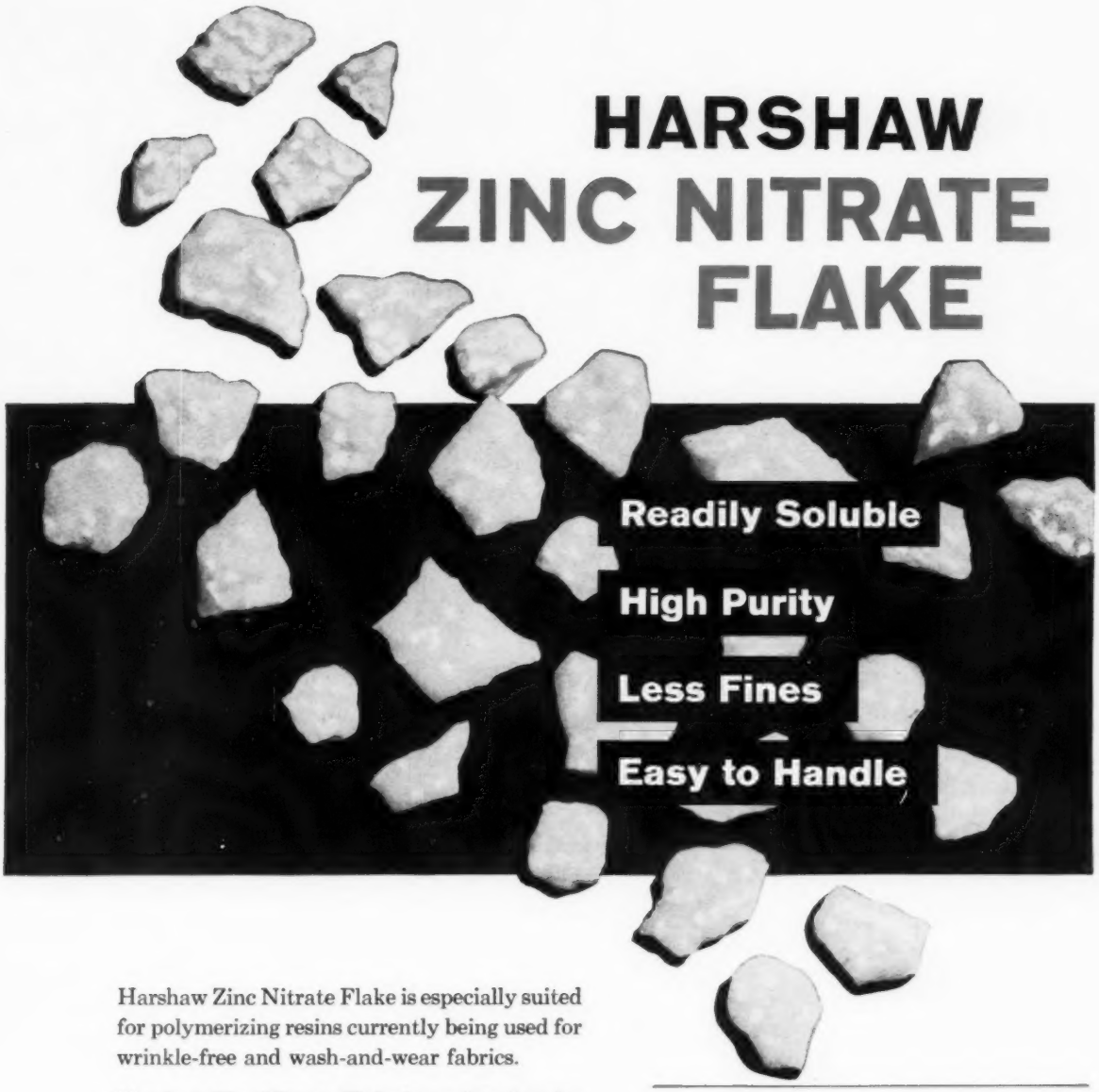
In the interests of better baling operations in your plant, find out what Logemann balers can do for you. Tell us what your specific problem is. We'll gladly show you how it can be answered in terms of better bales at lower costs and make a specific recommendation based on your requirements. Write for information today.

Box balers for waste may be obtained in either the hydraulic or power-driven type. Mention the kind of waste to be baled, how much in how many hours, the preferred size or weight of bale when inquiring about box balers.

LOGEMANN BROTHERS CO.

3102 West Burleigh Street • • • Milwaukee 10, Wisconsin

HARSHAW ZINC NITRATE FLAKE



Harshaw Zinc Nitrate Flake is especially suited for polymerizing resins currently being used for wrinkle-free and wash-and-wear fabrics.

Harshaw Zinc Nitrate Flake is produced under rigid control assuring the user of uniform resin catalysis at all times.

Harshaw Zinc Nitrate Flake measures about $\frac{3}{32}$" thick by $\frac{1}{2}$" long, thereby reducing dust and fines to absolute minumum.

Packed in 300 or 100 pound Leverpak drums with polyethylene liner, Harshaw Zinc Nitrate Flake is available for immediate shipment. Write for samples and prices.

TYPICAL AVERAGE ANALYSIS:

Assay as $Zn(NO_3)_2$	72.5%
Zn	24.6%
Fe	0.001%
Pb	0.003%
pH of 5% solution	5.2
Insol. in 1% Nitric Acid Solution	0.001%

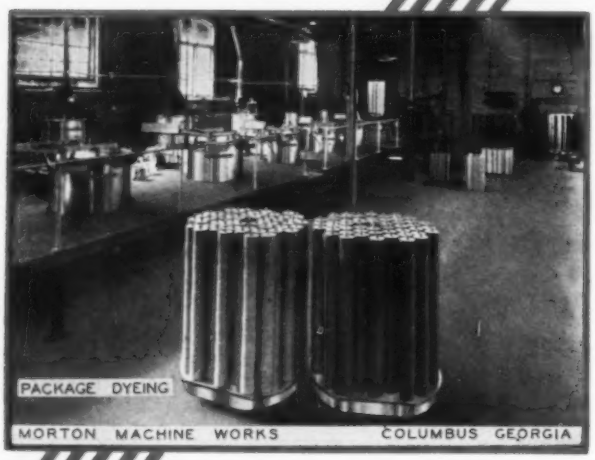
THE HARSHAW CHEMICAL CO.
1945 E. 97th Street, Cleveland 6, Ohio

CHICAGO • CINCINNATI • CLEVELAND • DETROIT • HASTINGS-ON-HUDSON, N.Y. • HOUSTON • LOS ANGELES • PHILADELPHIA • PITTSBURGH

FOR THE MOST SATISFACTORY DYEING EQUIPMENT INSIST ON THE

MORTON SYSTEM

THE FINEST MONEY CAN BUY



It pays to look into the quality of the machine and the quality of the work it will produce.

Whatever your requirements in stock, package, as well as beam dyeing machinery, a Morton System dyeing machine is your *best bet.*

Have one of our engineers call to discuss your problem.

MORTON MACHINE WORKS, Inc.

COLUMBUS, GEORGIA, U. S. A.

Manufacturers of the MORTON SYSTEM Machinery for Dyeing and Bleaching of:
BEAMS -:- PACKAGES -:- STOCK -:- PIECE -:- TOPS

VALVES — PUMPS — BEAM AND PACKAGE EXTRACTORS AND DRYERS — DYE BEAMS, ALL MAKES AND DESIGNS — DYE TUBES — DYE SPINDLES — TUBE SPACERS — STAINLESS STEEL DYE TUBES — CUSTOM BUILT TANKS TO CUSTOMER'S SPECIFICATIONS

Textile Industries
for November 1958

News IN BRIEF

"Decided Upturn" Seen. "The textile industry as a whole is certain to show a decided upturn by [1960 or 1961] due to population growth, the trend to more leisure

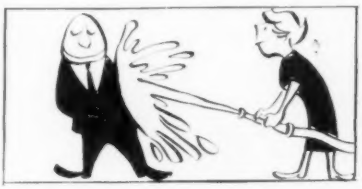
time, an increased gross national income, and more aggressive advertising and sales programs. When that time does come, the textile industry should be able to eliminate the sharp ups and downs which have plagued it for so many years."—William E. Clark, general manager, textile division, U. S. Rubber Co.

Shuttleless Loom Given OK. The 100 new Draper shuttleless looms recently installed by Pepperell Mfg. Co. at its Lindale, Ga., plant are working out well, according to a report by Brackett Parsons, president of Pepperell, at the annual meeting of the company. He reported that the new looms have operated 40 per cent faster than those they replaced, and turn out a better quality fabric.

New Polyester Fibers. Tennessee Eastman Co. is now in limited production of its new polyester fiber, "Kodel," at its Kingsport, Tenn., plant. It will reach retail markets next spring. Kodel will be available only in staple form at first, at a price slightly higher than Dacron. * * * North American Rayon Corp. is expected to begin marketing of polyester staple and tow, tentatively called "P-23," about mid-1959. * * * Chemstrand is reported to have a polyester fiber in the research stage. * * * Celanese Corp. of America and Imperial Chemical Industries, Ltd., will set up a jointly owned subsidiary, named Fiber Industries, Inc., to produce a polyester fiber to be called "Teron". A plant will be built near Shelby, N. C., and production is expected by 1960. The fiber will be produced under the same master patent specifications as Dacron and Terylene. Since Du Pont's exclusive rights expire in July, 1961, there has been speculation as to how Teron can be produced before then without a conflict with the Dacron license. Celanese president Harold Blancke, states, however, that there will be no conflict.

F-F Sweater Unit Is Versatile. A pilot model of a new full-fashioned sweater machine which can knit both jersey and rib and make bodies and trim without auxiliary equipment has been constructed by Morris Philip of Philip Knitting Mills, Brooklyn, N. Y. The machine is said to eliminate need for topping bars, flat machines, or circular transfer equipment. The machine will be built by Karl Lieberknecht, Inc., who are expected to display it at the knitting show in Atlantic City next spring.

More Wash-and-Wear Standards. Monsanto Chemical Co. has joined the growing list of chemical manufacturers, testing laboratories, garment manufacturers, and associations which have put



forward proposed standards for wash-and-wear fabrics and garments. Monsanto's standards are based on five three-dimensional check patterns made of high-impact styrene plastic, and said to be difficult to distinguish visually from the fabric samples on which they are based.

35,000 went to Greenville—1960 show planned

■ INFORMAL comments received from mill men and exhibitors during the 20th Southern Textile Exposition which was staged in Greenville, S. C., last month indicated that both were very well pleased—mill men with what they had seen; exhibitors with the firm orders taken during the show and prospects of more to come.

When the doors were closed at 6:00 p.m. on Friday, signalling the end of the five-day biennial event, counters in the hands of doormen registered an attendance of about 35,000, according to Miss Bertha Green, secretary of Textile Hall Corp., producer of the show.

Another show has been planned for 1960, Miss Green said, and already more than 100 applications for space in which to display their wares have been filed by suppliers to the industry. Dates set for the 21st Southern Textile Exposition are October 3-7, 1960.

Among suggestions made by exhibitors for improvement of future shows were the following:

1. That everyone admitted be issued and required to wear at all times while in the exhibition hall an identification badge.

2. That attendance of townspeople be restricted to one day only to avoid crowded aisles and indiscriminate giving out and requests for souvenirs.

3. That the use of cameras be controlled or banned.

4. That managers of local hotels and motels discontinue the practice of permitting industry suppliers who do not have space in the exhibition hall to display their products in rooms.

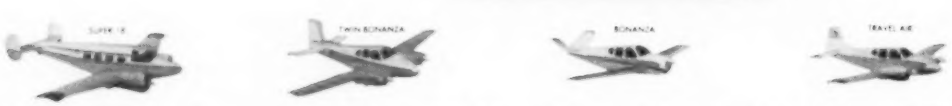
5. That television sets be banned.

flies you to the source of your business

THE NEW 1958 Beechcraft SUPER 18

Write or phone for descriptive brochure
ATLANTA, GEORGIA—POplar 7-3766
Charlotte, N. C., Tel. FRanklin 6-7150
Birmingham, Ala., Tel. FAirfax 2-0502

Southern Airways Company



BEECHCRAFT — AIRFLEET OF THE TEXTILE INDUSTRY

Government Needs Textile Men. Applications may now be made for technologist positions with various Federal agencies, paying from $4,980 to $11,610 a year. Positions open include those which

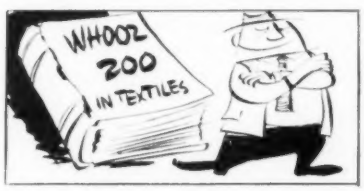
require that the person accepted "perform or direct the performance of responsible professional work of an applied scientific or technological nature" in textiles and textile fibers. Applications should be filed with the U. S. Civil Service Commission, Washington 25, D. C., from whom additional information is available.

New Starch Derivative. A new starch derivative, called cross-linked dicarboxyl starch, with possible textile uses, has been developed by researchers at the U. S. Department of Agriculture's Northern Utilization Research and Development Division, Peoria, Ill. The new starch is acidic, and does not gel on cooling.

Patent for Sock Top Turner Issued. U. S. Patent 2,849,167 has been issued to Joe E. Walser of High Point, N. C., for a mechanism to be used in the boarding operation to accurately fold back a predetermined portion of a stocking to form a single or multiple cuff.

Sweden Producing Acrylic Fiber. A Swedish manufacturer is now producing an acrylic staple fiber, "Tacryl," on a limited commercial basis. Tacryl is said to be wet-spun, using kerosene as a coagulant.

Who's Who in Textiles. The newly published Volume 30 of "Who's Who in America" lists 315 textile executives—0.6 per cent of the total of 50,645 notables who made the grade. Bankers and other credit executives topped the list of business men and women and industrialists who were included in the book, with 2.5 per cent of total listings. Other top groups: brokers and investment bankers (1.9 per cent), insurance executives (1.7 per cent), petroleum executives (1.3 per cent), food industry executives (1.3 per cent), metals mining and processing executives (1.1 per cent), and wholesale and retail executives (1.0 per cent).



Textile Exhibit for NYC. An exhibit of fibers, yarns, fabrics, trimmings, and chemicals will be held this fall in the exhibition hall of the Union Dime Savings Bank in New York, with the theme, "New York Is the Textile Town."

Chrysler Corp. is using 3-D fabrics on a wide scale in its current models; shown above is the interior of the 1959 Plymouth.

Textile Uses of Glass Beads. Microscopic glass beads—the type used to reflectorize highway stripings and signs—may have uses in the textile industry, it is suggested by a contest recently sponsored by a manufacturer of the beads. Research men from all over the U. S. and Canada submitted new-use suggestions in the contest; 19 of the suggestions received were pertinent to textiles: in functional specialty clothing; to decrease apparent soiling of carpets; and in home laundry starch to give whites a better appearance and stiffness and make ironing easier.

News in Brief

Rx for Textile Prosperity. "Fundamentally we believe if all segments of our industry had faith in their own integrity and products, they could enjoy a new-found prosperity and eliminate the sea-

sonal ulcers so common to the trade. If each company produced what it is equipped to produce in the very best manner it knows how and continued to sell at a price sufficient to return a reasonable profit, ours would be a much healthier and more stable industry." — Arthur E. Wullschleger, board chairman, Wullschleger & Co.

Labeling Bill Signed. Despite opposition from retail and textile interests, President Eisenhower has signed the textile labeling bill. The law requires that all cotton, silk, and man-made textiles be labeled to show the generic names, in order of predominance by weight, of all fibers in the article and the percentage of each present. Fibers making up less than 5 per cent by weight must not be labeled generically, but must be shown only as "other fiber" or "other fibers." Imported textiles must be labeled both with country of origin and fiber content. Federal Trade Commission is to enforce the act, which goes into effect on March 3, 1960.

Congressman Protests Transshipment. Rep. John J. Flynt, Jr. (D., Ga.) has protested to the Commerce Department concerning the arrival of a shipment of Japanese

Using Salt Efficiently

by INTERNATIONAL SALT COMPANY, INC.

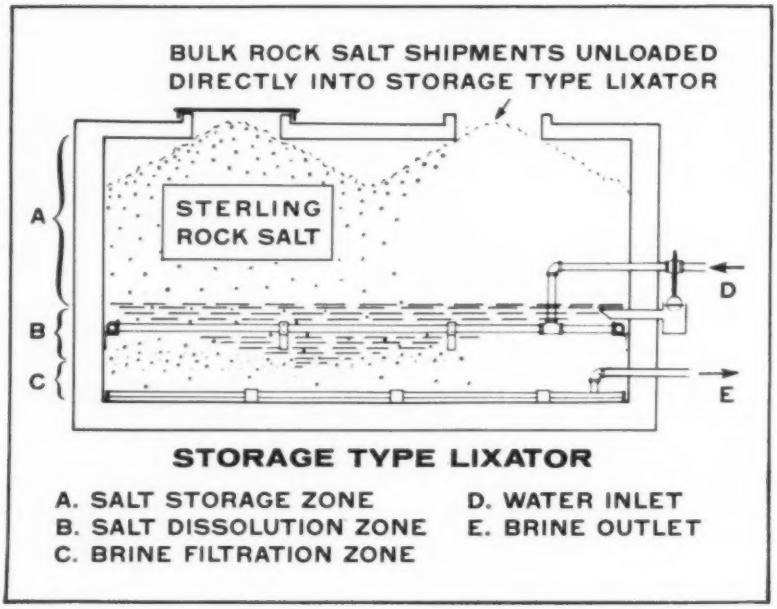
Producing Crystal-Clear Brine at Lowest Cost—by Self-Filtration

Today, more and more companies are using a foolproof brine-making process that produces crystal-clear brine from rock salt, *without using supplemental filter beds or other filtering devices.* This process takes place in the "Sterling Lixator," a rock-salt dissolver developed exclusively by International Salt Company. Operating on International's principle of self-filtration, the Lixator produces a rock-salt brine so high in purity and so brilliantly clean and clear that it can be used in many operations formerly thought to require highly refined evaporated salt.

Here, briefly, is how self-filtration works in the Sterling Lixator: A Lixator is filled with Sterling Rock Salt. Water, admitted near the top, dissolves salt as it flows downward. While flowing down, the brine made in this way becomes fully saturated, and can dissolve no more salt. Still flowing down, this brine is *completely filtered* by the salt-crystal bed in the bottom portion of the Lixator. Thus, the Lixate Brine drawn off through a discharge pipe at the bottom of the Lixator is clean, pure, crystal-clear—and the only source of power used is gravity, which costs nothing!

Other Lixator advantages. In addition to this superbly clean, fully saturated Lixate Brine, a number of other advantages are yours, when you use a Lixator:

- The Lixator permits salt storage and brine making at one location most convenient to the point of salt entry. *Pipes* deliver brine to points of use.
- Because Lixate Brine is piped to points of use, the work of moving dry salt from storage piles to other plant locations is eliminated. This can produce substantial savings in labor.
- The Lixator *automatically* controls salt feed, water feed, and brine discharge. Rapid, uniform brine production is maintained constantly, because in the Lixator there is no bridging, caking, or channeling.



The Storage Lixator — designed for larger operations. This is a combination salt storage tank and dissolving tank. On delivery, rock salt is unloaded directly into the Storage Lixator. The rest is automatic.

Many types of Lixators are available from International Salt Company. In addition to Storage Lixators, there are Silo Lixators and Sterling Model Lixators—in numerous designs to suit any plant layout. And every Lixator operates on the economical self-filtration principle.

For expert advice on the particular Lixator type that will do the best job for you, phone or write the nearest district sales office, or write to us direct. One of our sales engineers will gladly show you how this remarkable brine-making equipment can help you use salt most efficiently and economically.

Using salt efficiently in its many industrial applications calls for technical knowledge and experience. International Salt Company has both. Plus a continuing program of research and development in salt. These things can be put to work for you, in your plant, to help you get the most out of the salt or brine you use.

* * *

INTERNATIONAL SALT CO., SCRANTON, PA.

Sales Offices: Atlanta, Ga.; Chicago, Ill.; New Orleans, La.; Baltimore, Md.; Boston, Mass.; Detroit, Mich.; St. Louis, Mo.; Newark, N. J.; Buffalo, N. Y.; New York, N. Y.; Cincinnati, O.; Cleveland, O.; Philadelphia, Pa.; Pittsburgh, Pa.; Memphis, Tenn.; and Richmond, Va.

Service and research are the extras in **STERLING SALT**

PRODUCT OF INTERNATIONAL SALT COMPANY, INC.

velveteens consigned to a New York importer via South Africa [see TEXTILE INDUSTRES for October 1958, p. 109]. Congressman Flynt suggests that such entries be charged to the voluntary quotas imposed by Japan.

Wool and Mohair Support Prices. A shorn wool incentive price of 62 cents per pound and a mohair support price of 70 cents per pound for the marketing year beginning next April 1 have been announced by the U. S. Department of Agriculture.

New Colour Index Available. The fourth and final volume of the new edition of the Colour Index, listing all known dyestuffs, is now available. The Index is a joint effort of the American Association of Textile Chemists and Colorists and the Society of Dyers and Colourists (England). The set of four volumes may be obtained from AATCC headquarters in Lowell, Mass., for about $120.

"Look Up" and "Trade Up" in Carpets. Carpet sales during the first half of this year were nothing

Labor-Management News

Record Number of "Unfair" Charges Filed. National Labor Relations Board's statistical report for the second quarter of 1958 shows that an all-time high number of unfair labor practice charges were filed by individual employees against unions, accounting for 70 per cent of the total of 952 cases filed. Other highlights of the report: Number of charges filed against employers also reached an all-time high; more collective bargaining elections were held than in any quarter since 1952, with unions winning 66 per cent of the elections; decertification elections reached an all-time high; and more formal decisions were issued than in any quarter since 1951.

TWUA to Seek Higher Wages. William Pollock, president of the Textile Workers Union of America, said in a recent address, "The whole TWUA program this year is geared so that when contract talks start in April, we can get a wage increase for people in the textile industry."

NLRB Drops Affidavit Secrecy. Following a decision by the U. S. Court of Appeals for the 2nd Circuit, National Labor Relations Board has decided to make available to parties to board proceedings pretrial affidavits supplied to it by witnesses. NLRB had previously held that administrative agencies were not required to make such statements available.

AFHW Seeks $1.25 Minimum. The national executive board of the American Federation of Hosiery Workers, AFL-CIO, has called for a $1.25 minimum wage in all future contracts. The board also passed a resolution condemning the Taft-Hartley Act, which it says has been responsible for a 76.5 per cent drop in union membership in the hosiery industry since 1947.

Why Businessmen Must Politic. " . . . I will soon propose to the international executive board that

we subsidize union members to run for State Legislatures."—David McDonald, union president.

No-Solicitation Rule Upheld. The U. S. Supreme Court has held in two cases, one of which involved Avondale Mills and the Textile Workers Union, that an employer who engages in antiunion solicitation and at the same time enforces a valid no-solicitation rule against his employees does not interfere with their right to organize.

Minority Picketing Prohibited. National Labor Relations Board has ruled that picketing for recognition by a union which does not represent a majority of the employees constitutes an unfair labor practice, even though the union claims that it does not seek to represent the employees.

Organizers Organized. The Field Representatives Federation, the union for union organizers, has won recognition from the AFL-CIO, but had to go to NLRB to do so. The organizers now have a union contract, which gives them a $10 per week pay boost (to $140 a week), and the union shop.

Welfare and Pension Fund Disclosure. For mills on a calendar year basis, deadline is May 1, 1960, for the first annual financial report required under the new law covering disclosure of welfare and pension funds. For those on a fiscal year basis, the report must be filed within 120 days after the fiscal year ending in 1959.

TWUA Appeals to Ike. Victor J. Canzano, cotton and rayon director for the Textile Workers Union of America, has appealed to President Eisenhower to prevent the closing of Wamsutta Mills, New Bedford, Mass.

Notes. Hawthorne Knitting Mills, Inc., Hawthorne, N. J., has signed a contract with American Federation of Hosiery Workers, calling for one- or two-week vacations, six paid holidays annually, employer-paid health and accident insurance, time-and-a-half for overtime and Saturdays, seniority rights, check-off, grievance procedures and arbitration, and no strikes or lock-outs. * * * Dan River Mills, Aliceville, Ala., has been ordered by National Labor Relations Board to bargain with United Textile Workers, and to re-instate with back pay five employees who allegedly were discharged for union activity.

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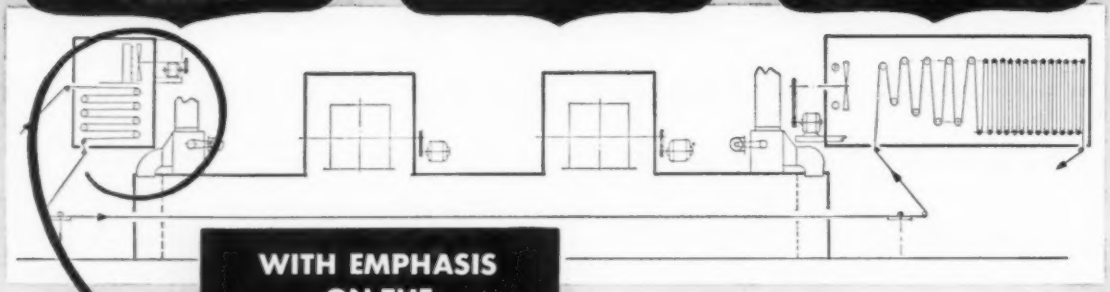
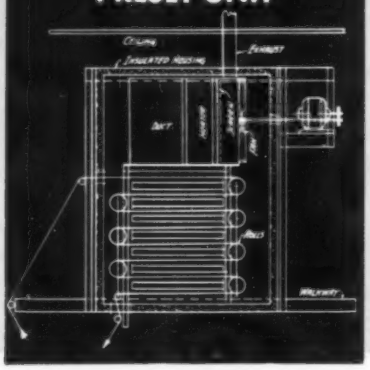
A & G PRESET + **A & G TENTER DRYER** + **A & G ROLL TYPE CURING UNIT**



WITH EMPHASIS ON THE PRESET UNIT



1 Eliminate tenter clip marks

2 Keep tenter clips clean

3 Prevent resin migration

THE RESIN PRESET—Developed by Andrews and Goodrich to increase production, to save on maintenance and down time, and to produce higher quality resin treated goods.

A major problem which instigated the design and development of the Andrews and Goodrich Resin Preset was that of resin "pick-off" on the tenter chain clips during the initial stages of drying in the frame. The resin would then cure on the clips causing faulty operation. Subsequent cleaning of the clips was a long and tedious operation.

The Andrews and Goodrich Preset Design acknowledges that resin will pick off but isolates this dilemma to an easily maintained roll type unit. Additional features of this machine are that it eliminates clip marks, prevents resin migration, boosts production both directly and indirectly, has low initial cost and low running costs.

If you at present have a resin finishing range but do not have an Andrews and Goodrich Preset unit, you should investigate this dryer that is designed for this specific job.

You may be contemplating the installation of a resin finishing range. Why not have an Andrews and Goodrich engineer discuss the proper design and sizing of drying and curing machinery with you at your convenience?

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to shout about, says A. & M. Karagheusian, Inc., but the second half should show a steady increase throughout the country. Reasons: Carpet stocks hit rock-bottom during the summer; new private housing starts may go as much as 10 per cent above the one million originally predicted for the year; and consumers are now seeking top value for their money—and they realize they can't buy long wear without paying for quality.

Committee Sympathetic to Textiles. Says Halbert M. Jones, president of the American Cotton Manufacturers Institute, of the Senate subcommittee currently investigating the problems of the textile industry: "Unlike many Congressional committees, the members of this one are sympathetic to textiles and are determined to be helpful." Members of the subcommittee are Senators Payne (R., Me.), Bible (D., Nev.), Thurmond (D., S. C.), and Cotton (R., N. H.). Staff director is Dr. William H. Miernyk, New England economist.

Half a Million Designs Registered in Japan. The Japanese Textile Color Design Center reports

that more than 500,000 "new and original" textile designs have been registered in the last three years.

PTI News. Philadelphia Textile Institute started its Diamond Jubilee fall semester with an enrollment of 375, including 115 freshmen—largest first-year class since 1951. Of the freshmen, there are 35 from 12 foreign countries. * * * The school will hold open house on Nov. 2-3, with the theme, "Seventy-Five Years of Progress in Textile Education."

Plan for Tax Averaging. A plan for tax averaging by persons whose income fluctuates widely from year to year has been put forward by two San Diego CPA's in the October issue of *The Journal of Taxation*. Under the plan, any individual could take part of his current taxable income and buy non-interest bearing certificates from the government. These would be tax deductible. The certificates could be cashed in at any time and added to income, thus permitting taxpayers to average income over as many years as they chose, at their own discretion.

India to Import Textile Machines. The government of India has decided to permit textile mills which export all or part of their production to use some of their foreign exchange earnings to purchase machinery, raw materials, and equipment from abroad.

UN Textile Expert Advises Uruguayan Wool Men. United Nations textile expert Victor Saxl has proposed a ten-year improvement plan for the Uruguayan wool textile industry: improvement of wool classification; improved clipping methods, with Australian teams invited to visit Uruguay every two or three years to give advice; minimum standards for classifying and skirting wool; and establishment of a wool research laboratory.

Textile Distributors Define Associate Membership. During the annual meeting of Textile Distributors Institute, Inc., the provision for associate membership was defined as follows: Any yarn producer, mill, or dyer, printer, and finisher, directly engaged in the business of producing, weaving, knitting, and/or processing manmade and/or natural fibers and/or fabrics made therefrom, other than those eligible for regular membership.

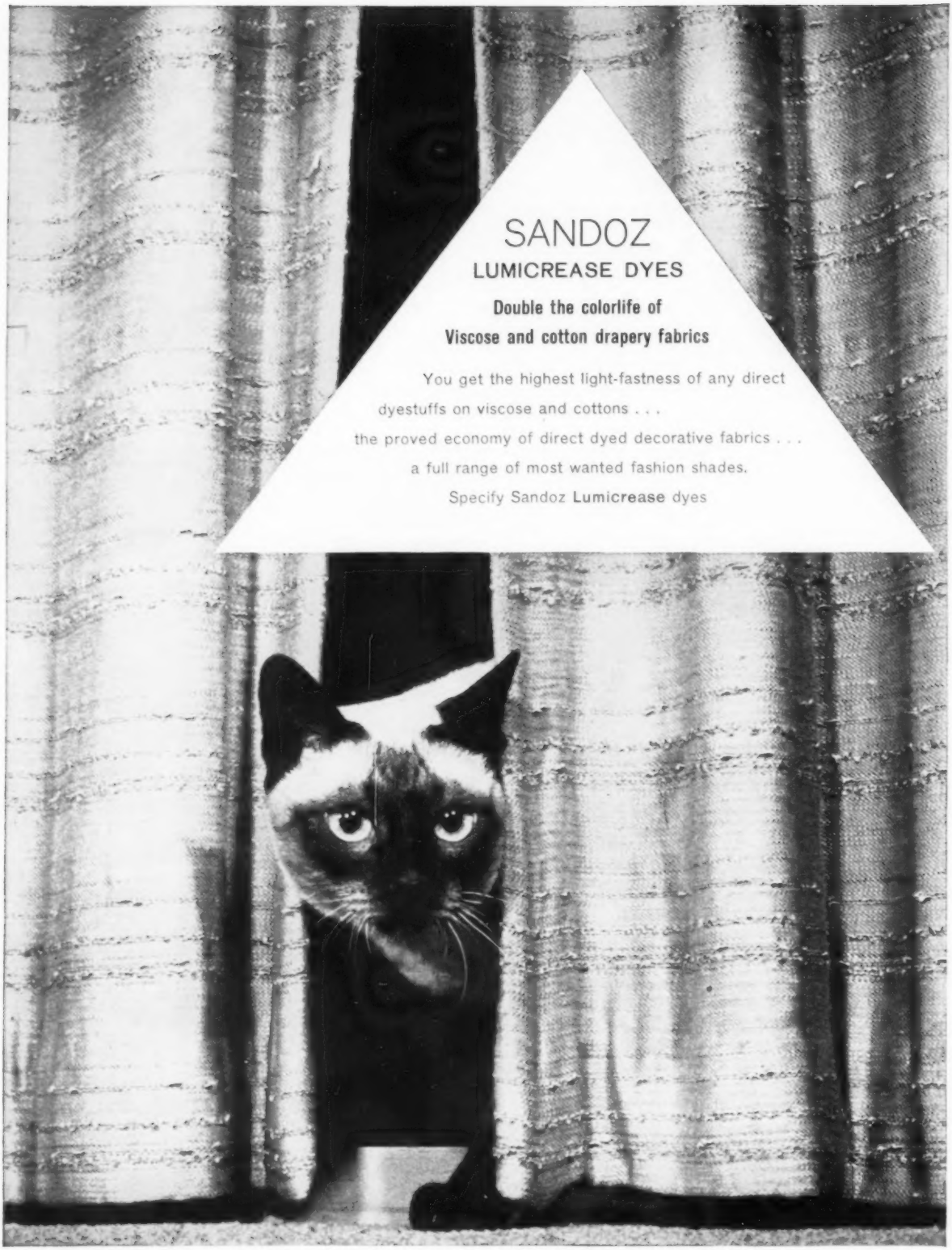
Clemson Strengthens Textile Curriculum. Dean Gaston Gage of the Clemson College School of Textiles has announced changes in the curriculum designed to provide a stronger program for students who plan to enter the textile industry. Effective in September, the textile manufacturing course became textile management, and textile engineering became textile science. Revisions in textile management consolidate all textile technological subject matter in less credits and less class

News in Brief

Officials of Barneby-Cheney Co. examine sample of "carbon wool," which has possible textile uses (see TI for July 1958, p. 148).

This 20-ft by 30-ft banner proclaimed American Wool Month at 7th Ave. and 38th St., in the heart of New York's garment district.

Asbestos Textile Institute has adopted the above symbol; it will appear on product labels of the Institute's six member companies.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hours. The new textile science curriculum provides for basic sciences, including "must" work in organic chemistry, replacing applied engineering subjects. Only minor changes affect the third textile curriculum of textile chemistry.

Production Must Double in 20 Years. If gains in education, leisure, and living standards are to continue at present rates, the production of the average American

worker will have to double by 1978, Henry B. du Pont, vice-president of Du Pont Co., told a recent meeting of the Instrument Society of America. Since the percentage of the population which is in the work force is expected to decline, those remaining will need the help of continual advancement in instrumentation and automatic control, he said.

Puerto Rico Likes New Wage Bill. Fair Labor Standards Act has been amended to permit minimum-wage hearings for Puerto Rico to be held every two years instead of annually as heretofore. Island officials expect the ruling to give another boost to Puerto Rico's industrialization.

Cotton Threatened by Nontextiles. Cotton is being threatened by greater competition from nontextile materials, William E. Reid, president of Riegel Textile Corp., told the Plains Cotton Growers re-

cently. "Cotton is still king, but its throne is being challenged. If the spinner and weaver cannot get the kind of cotton they need, in the right quantity to remain competitive with other materials and textile fibers, the kingdom will topple. And so will the position of the producer," he told the cotton men.

Burlington Executive Bullish on Textiles. Speaking before a recent marketing session of the National Industrial Conference Board, Charles F. Myers, Jr., vice-president of Burlington Industries, Inc., predicted a 4 to 5 per cent increase in unit sales by the textile industry in 1959, compared with 1958, and that industry-wide prices would rise by 3 to 5 per cent, with boosts as high as 8 to 10 per cent in some areas. Some factors cited: predicted rise in industrial output, which directly affects the 23 per cent of textiles which go into industrial uses; population growth, with shift in age group to larger proportion of those who buy more textiles; liquidation of textile inventories; replacement of the chemise by the Empire Look in women's apparel, which will make wardrobes obsolete.

Vat Dye Institute is offering this kit at cost ($15.00) to teachers for classroom demonstration of the procedures for vat dyeing.

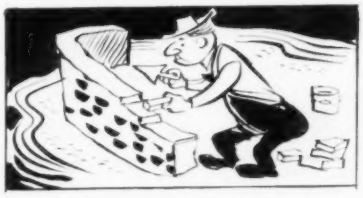
Cotton Group to USSR. A group of cotton specialists from the U. S. Department of Agriculture and the National Cotton Council spent the month of September in the Soviet Union studying cotton growing and plant physiology. The group made the visit under an exchange program negotiated by the Department of State.

Competition Coming for Tufteds. Tufted textile manufacturers, who as yet have felt only domestic competition, will sooner or later be confronted with competition

News in Brief

from all over the world, R. E. Hamilton, Cabin Crafts, Inc., said at a recent meeting of the Tufted Textile Manufacturers Association. "The time is closer than you think when you can expect world competition in the domestic market," he told the group.

Filipinos Ask Import Protection. Regulation of imports of textile remnants has been asked by the



Textile Mills Association of the Philippines, to protect the local textile manufacturing industry.

Textile Failures Up Slightly. Manufacturers of textile mill products showed 74 failures for the first eight months of 1958, rising from 68 in the same period of last year, according to Dun & Bradstreet. During the same period, liabilities of the firms which failed totaled $8,066,000.

Cotton Gains in Apparel Market. Statistics recently released by the National Cotton Council show that cotton scored significant gains in the apparel market during the 1947-1956 period. Consumption increased by more than 1¼ million bales (from about 2.7 million to more than 4 million bales), and from 56 per cent of the market to 61 per cent of the market (in terms of raw cotton equivalent) in apparel uses during the 10 years covered by the Council's survey.

Textiles a Growth Industry? Courts & Co., investment bankers, use the following line of reasoning to deduce that textiles is a growth industry: The apparel market will probably grow faster than the over-all economy in the present business cycle, since the "apparel population" (giving double weight to those ages 15-29, who buy about

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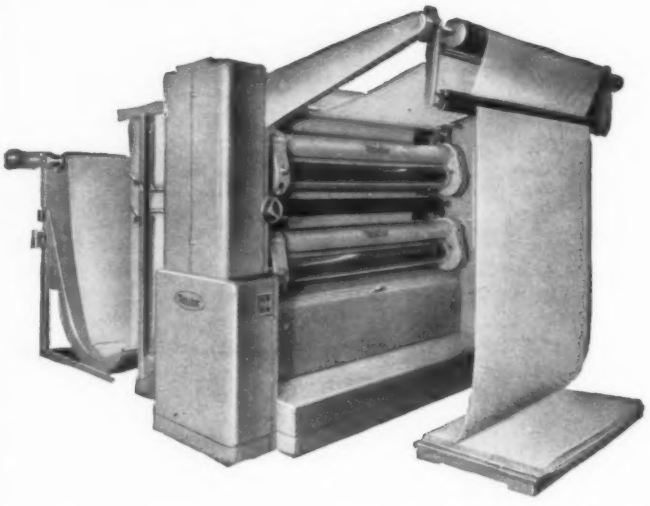

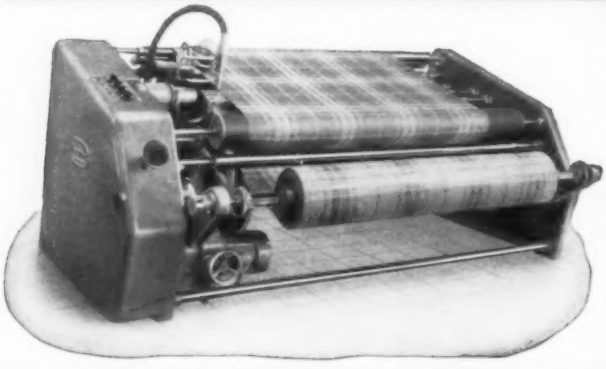

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twice as much apparel per capita as the rest of the population) is growing at a faster rate than the population as a whole; the non-apparel market will grow at the same rate as the over-all economy (no further losses of nonapparel markets to nontextile items are expected); therefore the textile industry will grow faster than the economy. By definition, a growth industry is one which expands its share of the economy over a full business cycle; textiles will do this. Therefore textiles is a growth industry. Q.E.D.

Farmers May Increase Cotton Allotments 40%. U. S. Department of Agriculture has announced that cotton farmers may plant up to 40 per cent more than their alloted acreage for the 1959 crop year, but if they do they will be eligible for price supports at a level 15 per cent of parity less than under the regular allotment. Regular allotments will be supported at not less than 80 per cent of parity.

NAHM Warns on Substandard Hosiery. National Association of Hosiery Manufacturers has sent a letter to its members warning against selling unmarked substandard hosiery. According to Federal Trade Commission rules, the word "Irregulars," "Seconds," or "Thirds," as applicable, must be marked on each sock or stocking; tags or tickets are not permissible.

News in Brief

IRS Issues Expense Account Regulations. Final regulations on the reporting of expense account items for income tax purposes have been issued by the Internal Revenue Service. An employee who is required to account, and does so account, to his employer for his business expenses will not be required to report such expenses on his tax return, either detailed or in total amount. But any allowance to the employee in excess of actual expenses must be reported in the return.

Merchandising Notes

V. I. Prewett & Son Hosiery Mills are marketing infants' hosiery in these packages, with illustrated nursery rhyme cut-outs.

American Tyrex Corp. has been formed by five of the six major U. S. and Canadian rayon tire cord manufacturers (apparently only Du Pont is not a member) to compete more effectively with the "glamorous name of nylon." The corporation will promote "Tyrex" as the name for "super-super strength" rayon cord.

Collins & Aikman Corp. is the assignee of U. S. Patent 2,849,785, covering a method for producing pile fabric made of heat-set irregular loops. The yarn for the fabric is made of a ply or plies of normally shrinking yarn about which are twisted plies of high-shrinkage yarn. When the fabric is subjected to heat, the yarn is formed into loops.

Croft Carpet Mills, Inc., has introduced a line of carpets made of textured Caprolan, Allied Chemical's filament nylon 6.

American Velcro, Inc., has unveiled a new type of slide fastener, which it calls a "zipperless zipper." The fastener is made of two strips of nylon fabric, one having thousands of tiny hooks and the other having tiny loops. When the two strips are pressed together, the fastener is closed; opened when they are peeled apart. The company likens the action of the fastener to that of a brier patch.

National Cotton Council reports that the 1959 Maid of Cotton, to be chosen from contest finalists in

Memphis on Dec. 29-30, will make a round-the-world tour to promote cotton.

Joseph Bancroft & Sons Co. has won a suit in a Federal Court in which its Ban-Lon trademark was attacked as invalid. Judge Francis L. Van Dusen also ruled that Bancroft may legally set the terms on which manufacturers of sweaters will be allowed to use it.

Du Pont Co. has formed two new groups within its Textile Fibers Department, to keep retailers informed of new developments in apparel containing Du Pont fibers. The groups are women's and children's apparel, and men's and boys' wear. * * * *Fire Engineering* reports, according to Du Pont, that a survey of 600 fire chiefs showed 68 per cent preferred Dacron and cotton fire hose, 17 per cent preferred all-cotton, 5 per cent preferred nylon and cotton, and 10 per cent specified no particular choice.

Franklin Sweater Mills, Inc., is the assignee of U. S. Patent 2,854,669, covering the construction of form-fitting knitted stretch swim trunks.

Hanes Hosiery Co. has solved the problem of locating a full box of stockings in a pile of full and partly full boxes, by sealing the boxes with a narrow transparent pull-tape.

Vat Dye Institute announces that the goal of its current promo-

tion campaigns is the sale of 50 million pounds of vat dyes for textiles annually by 1963.

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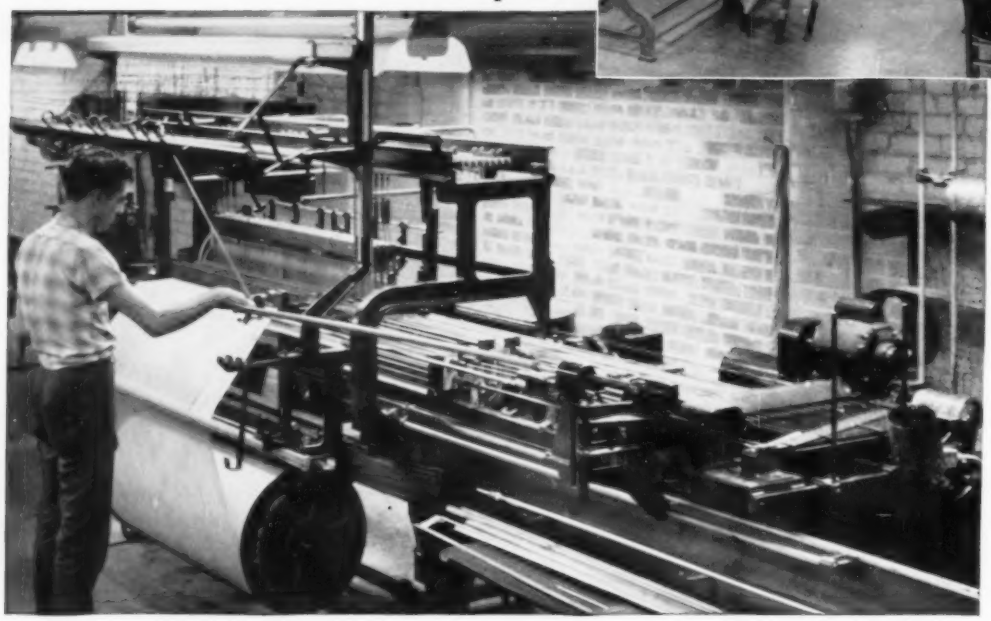

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AN **EXECUTIVE** *Views*

THE NEWS IN TEXTILES

Government help and how it hurts cotton

WE HAVE had a good deal to say from time to time about the problems confronting spinners on account of existing methods of harvesting, ginning, and precleaning cotton, and recently a couple of very interesting reports reached us from the U. S. Department of Agriculture. One of these was Marketing Research Report No. 238, entitled "Effects of Lint Cleaning of Cotton." This was stated to be "an economic analysis at California gins."

This brochure sets forth that "This study was undertaken to determine the effect of the lint cleaning of machine-picked cotton upon grade, bale value, and returns to farmers."

The report goes on to say:

"Routine use of any of the four types of lint cleaners studied resulted, on the average for all bales, in reductions in average bale value when weight losses from lint cleaning were taken into account. The average amounts of such reductions for bales of machine-picked cotton sampled during the 1954-55 and the 1955-56 seasons were as follows:

Type lint cleaner	Average reduction in bale value
Controlled-bat saw-type	$1.40
Flow-through saw-type	.76
Air-centrifugal	1.06
Air-beater-centrifugal	.38

"Charges made by gins for the lint cleaning services would have to be added to the above reductions to obtain the total cost to the farmer.

"Such charges average about $1.60 per bale on bales sampled in connection with this study."

Any normal person who understood that putting cotton through a lint cleaner netted a loss to the farmer would find it hard to understand why farmers are so insistent upon gins being equipped with these lint cleaners, and why ginners are spending so much money to install them, when the entire cotton spinning industry is up in arms about the damage these things are doing to their principal raw material. It is certainly a confusing proposition when an official USDA report shows that the farmer, on the average, will lose up to $3 a bale by having his cotton put through lint cleaners, and the biggest loss of all was reported for the most popular of all lint cleaners, which is the licker-in type.

THE ANSWER to this apparently insane proposition seems to be the government loan. Spinning quality appears to have no influence on the loan value of cotton; and stuff that a cotton buyer might turn down, as containing too much pepper trash and too many seed coating fragments, can go right into the loan at the value assigned for what may be a fictitious grade.

The licker-in type lint cleaner is naturally the worst offender about grinding up trash which it does not remove. This is what the Department of Agriculture refers to as the controlled-bat saw-type, and it is nothing but an over-sized licker-in operating at about 300 times the normal production of the similar cylinder on a cotton card. There is not the slightest doubt that such a licker-in cylinder will put out a very pretty sample, and there is not the slightest doubt that this pretty sample will be much neppier than it was before it went through the lint cleaner, if the neps are properly counted.

Furthermore, there will be a quantity of seed coating fragments in this cotton that would not have been there with normal ginning. Also, there will be a great increase in the very fine pepper trash.

It is very difficult to get at any definite information about this fine pepper trash problem. A government cotton classer will generally not even notice it because it does not show up in a cotton classer's sample. It will show up when making a fiber array, and it shows up most painfully in the yarn. The government classification of cotton takes no account whatever of seed coating fragments, which are put in the cotton by grinding up motes with the saw cylinders.

The only plausible explanation of why a farmer will risk taking a definite loss, as set forth in this USDA report, is because he figures that his cotton is going to gin out worse than strict low middling without the help of the lint cleaner, and regardless of what the gin

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Fig. 1944—Large stainless steel "Y" Valve for 150 W.P. Outside screw stem is threaded and rises through a bronze bushing in upper yoke. Made with flanged ends only.

Large Flush Bottom Tank Valve for 150 W.P. Available in two designs: Fig. 2309—Disc opens into the tank. Fig. 2310—Disc opens into the valve.

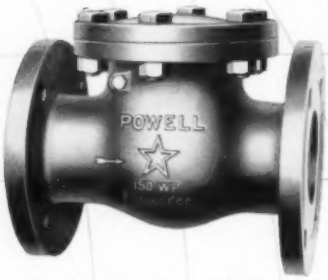

Fig. 2633—Large stainless steel Swing Check Valve for 150 W.P. Bolted flanged cap. ASA end flanges, with 1/16" raised face. Designed for straight full flow through when wide open.

Fig. 1861—Small stainless steel Globe Valve for 200 W.P. Union bonnet. Plug type disc, integral seat. Also available with flanged or socket welding ends.

Fig. 2456-SG—Large Stainless Steel Gate Valve for 150 W.P. Outside screw rising stem and yoke; interchangeable accurately guided solid or split wedge discs. End flange dimensions conform to latest standards.

Fig. 1886—Stainless steel (304 or 316) Liquid Level Gauge. Offset pattern. W.W.P. 350 pounds. Screwed end valves with inside screw rising stem. Sizes, ½" and ¾".

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does to the cotton to raise the grade, a kind government agency is ready to buy it if it looks like a good grade.

In a season when there is a good deal of spotted cotton, the farmer can profit from the use of the lint cleaner, because as the Department of Agriculture euphemistically expressed it, "the lint cleaner diffuses the spots," so that the value of a bale of cotton may be raised by $25 or $50 by scattering this spotted lint throughout the bale so thoroughly that it is not noticed. The spinner is therefore paying up to $50 a bale to have something done for him that he could have done for himself for nothing if he wanted to buy spotted cotton in the first place.

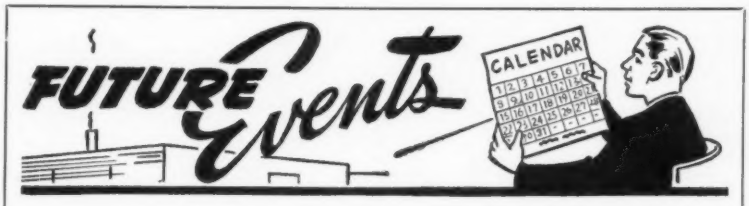
Spinners who are making yarn for finishing frequently have excellent reasons for not wanting spotted cotton, and when the lint cleaner diffuses the spots in a bale and the spinner gets this inferior cotton without knowing it, he has the same troubles to contend with at the finishing plant that he would have had if he had bought the spotted cotton and diffused the spots himself. This practice seems to border closely on being a swindle.

It seems, therefore, that some of these government helps are not doing the farmers a whole lot of good, and this particular help is certainly doing the spinners much harm. Apparently the only people who benefit are the manufacturers of the lint cleaners and the ginners, who seem to get around $1.50 a bale for the lint cleaning service. Since figures presented in this brochure indicate that a lint cleaner outfit for a 5-90 gin plant runs to about $17,000, if such a gin can turn out 5000 bales in a season, the ginner would be making a profit on his investment, but after figuring maintenance and power, the profit is probably not unreasonable.

MAYBE the cotton spinners themselves have been largely responsible for the tremendous popularity of these damaging lint cleaners. Where a spinner has been accustomed to running strict middling cotton, he wants to keep on getting it, regardless of whether real strict middling is available or not, and if he can't get real strict middling he will take a synthetic grade.

The spinners will bitterly complain about the dirty yarn they

(Continued on page 159)



DATE	EVENT	LOCATION
Oct. 30-Nov. 1	AATCC national convention	Hotel Conrad Hilton Chicago, Ill.
Nov. 5-7	Annual National Industrial Engineering and Management Clinic	Sherman Hotel Chicago, Ill.
7-8	Textile Seminar sponsored by University of Georgia division of clothing and textiles in extension, teaching, and research	Georgia Center for Continuing Education Athens, Ga.
8	Textile Operating Executives of Georgia slashing and weaving discussion; 9:00 A.M.	Georgia Tech Atlanta, Ga.
14	Hudson-Mohawk Section AATCC	Chelsea House Tribes Hill, N. Y.
14-15	Conference on "Behavior of Textiles"	Barbizon Plaza Hotel New York City
15	Eastern Carolina Division STA discussion meeting	N. C. State College Raleigh, N. C.
17-19	Narrow Fabrics Institute annual meeting	Hotel Roosevelt New York City
18-20	National Conference on Standards	Hotel Roosevelt New York City
Dec. 1-5	National Exposition of Power and Mechanical Engineering	Coliseum New York City
1-3	Soil and Crop Science Society of Florida annual meeting	Hotel Soreno St. Petersburg, Fla.
4	Rhode Island Section AATCC annual meeting	Johnson's Hummocks Grille Providence, R. I.
5	Niagara Frontier Section AATCC	Buffalo, N. Y.
5	Northern New England Section AATCC	Hotel Vendome Boston, Mass.
5	Western New England Section AATCC	Rapp's Restaurant Shelton, Conn.
6	Piedmont Division STA, discussion meeting	Johnston Memorial YMCA Charlotte, N. C.
6	Southeastern Section AATCC	Atlanta Athletic Club Atlanta, Ga.
1959		
Jan. 26-29	Plant Maintenance & Engineering Show	Public Auditorium Cleveland, Ohio
26-29	International Heating & Air Conditioning Exposition	Convention Hall Philadelphia, Pa.
Mar. 19-21	American Cotton Manufacturers Institute annual convention	Palm Beach Biltmore Palm Beach, Fla.
26	Textile Quality Control Association	N. C. State College Raleigh, N. C.
Apr. 29-30	Fiber Society, Inc., meeting	Fontana Village, N. C.
May 4-8	Knitting Arts Exposition	The Auditorium Atlantic City, N. J.
5	Underwear Institute annual meeting	Hotel Traymore Atlantic City, N. J.
8-12	Tufted Textile Manufacturers Association annual convention	Aboard Cruiser "Arosa Sun" from Savannah, Ga.
12-16	Textile Institute annual conference	Scarborough, England
12-14	Cotton Research Clinic	Grove Park Inn Asheville, N. C.
18-23	National Cotton Week	
Sept. 10-21	3rd International Exposition of Textile Machinery	Samples Fair Grounds Milan, Italy
Oct. 8-10	AATCC National Convention	Sheraton Park and Shoreham Hotels Washington, D. C.
Nov. 17-20	Packaging Machinery Manufacturers Institute Show and Forum	Coliseum and Hotel Statler New York City

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Textile Industries

WASH AND WEAR

Important factors in wash-and-wear: Research in resin chemistry

. . . The quality of the raw material

Wash-and-Wear: New Dimension In Textiles

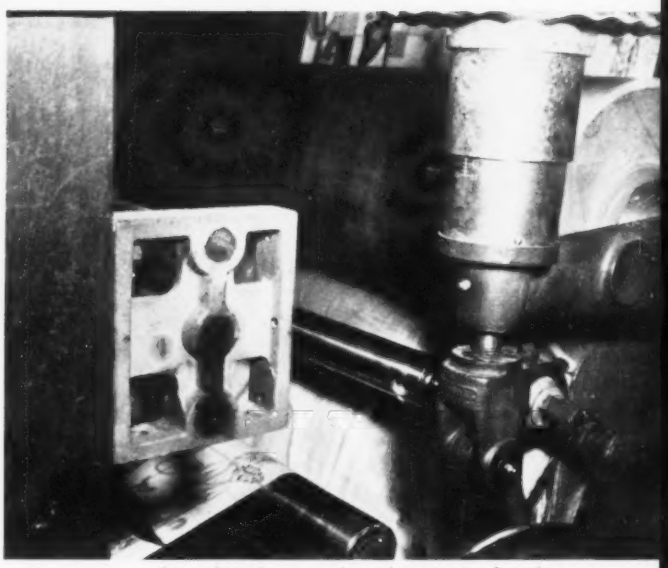
Staff prepared
Exclusive

BEFORE resins introduced a new production technology, cotton finishing operations concentrated for the most part on the enhancement of fabric appearance and hand through application of color and finishing materials. Although this added to the fabric's value, the finishing compounds used were at best semipermanent,

. . . Quality control

. . . Proper techniques in garment manufacture

. . . Yarn and fabric construction



. . . Resin formulation and application in the plant

and in the long run the fabric had to rely heavily on the inherent properties of the fiber.

Resin treatment imparts many new properties, but these inherent properties of cotton have by no means lost their importance. In fact, they must be preserved to a useful degree if the fabric is to have utility.

In the transition to resin finishing, plants soon learned that older finishing techniques had to give way to a new production technology that became even more exacting when the concept of wash-and-wear was evolved. Chemists and technologists learned that the new properties had to exist in more delicate balance with each other, and with fiber properties.

Moreover, there was no magic ingredient that could accomplish this end result. Sound formulation, together with strict control over finishing, were clearly called for. To do otherwise could prove costly. For in contrast with formulations based on starch, the new materials were more difficult to remove, if for some reason reprocessing was found necessary. Furthermore, improper control over finishing could permanently impair fiber properties, and produce other undesirable effects.

In the practical developmental work that followed to produce better finishes, other factors of influence such as yarn size, twist, fabric weave, and weight began to come into sharper focus. And finishing plants began to work with

(Continued on page 89)

. . . Suitability for automatic home laundry machines

. . . Consideration of the end use of the garment

What Is Wash-and-Wear?

It means different things to different people; it depends on how you approach it

by P. J. Fynn

Director, Research Laboratory
J. C. Penney Co., Inc.

Exclusive

THE EXISTENCE of so many divergent expressions about the nature of wash-and-wear and the many attempts to define it call to mind the fable of the three blind men hearing for the first time about an incredible beast called an elephant. They decided to go "see" for themselves. As they were lead up to the animal the first one seized the trunk; the second found the tail; and the third encountered a leg, whereupon he cried out, "I perceive an elephant is very like a tree." The first one replied, "No, it is more like a serpent," while the second said, "You are both wrong, it is like a broom."

Our advertisers, our producers, and our consumers, having approached wash-and-wear from three directions, do not perceive the monster in identical ways. Let's back off and get the whole picture.

When Is Wash-and-Wear Not Wash-and-Wear? What has come to be called wash-and-wear evolved from several fabric and garment properties, previously unknown, which were incidental to the use of the hydrophobic, thermoplastic synthetic fibers. These properties—dimensional stability, low soil retention, rapid drying, shape retention, and fair appearance after laundering without much pressing—were quickly recognized as assets and as valuable promotable features.

Meanwhile, producers of natural-fiber fabrics and rayon fabrics had been developing chemical finishes to resist soiling and spotting and to improve wrinkle recovery. These resin finishes were evolution products of attempts to enhance and upgrade coarse cotton fabrics and make rayon look and feel like linen.

When consumers reacted enthusiastically to the unusual properties of the synthetic fibers, the natural-fiber producers recognized in the resin finishes a possible means of endowing their products with some of the "magic" qualities of the synthetics and thus commenced the frantic scramble to achieve wash and wear.

Whether or not wash-and-wear has already been achieved is a moot question, hinging more upon semantics than upon demonstrable properties of apparel. The answer can be "yes," or "no," or "maybe," depending upon the function the particular article of apparel is intended to perform. If, as it should in strictest honesty, wash-and-wear means that a washed but totally unpressed article will look as good as a properly laundered and properly pressed garment, then the answer is "no" in all but an infinitesimal number of instances.

If, on the other hand, wash-and-wear means you can get by in any of several situations with little or no pressing of a garment after washing, then the answer must be "yes" in an increasing number of instances. Fortunately for proponents of wash-and-wear, this state of affairs is made possible to a large extent by an increasing trend toward informality in dress and a marked deterioration of our standards of sartorial propriety.

Cotton and Rayon Don't Yet Equal the Synthetics. Despite re-

Like the three blind men examining the elephant, ad men, textile men, and consumers approach wash-and-wear from different viewpoints, don't see the monster in identical ways.

The term "wash-and-wear" is literally true in only an infinitesimal number of instances.

markable strides in the chemistry and mechanics of finishing the "have-not" fibers to equal the performance of the "have" fibers, wash-and-wear still stands on two legs, so to speak: synthetic fibers and chemically treated natural fibers. There have been some quite promising effects obtained with treated "have-not" fibers, but complete equality of performance of both types has not been achieved. In this case "have-not" fibers are those fibers, natural or man-made (cotton, linen, wool, rayon, and acetate), which do not have the inherent properties to wash-and-wear performance, but which are doctored in some way to acquire such properties.

From the point of view of the consumer, the first and most outstanding characteristic of any item promoted as wash-and-wear is its ability to be washed at home and to present a neat appearance when worn without ironing. The kind of fiber or blend or finishing process used to achieve this ability is not the primary concern. To the customer shopping for wash-and-wear, an attractive styling and coloring, proper size, appealing price, and the promise of wash-and-wear performance is sufficient.

The identity of the fiber or the trade name of the finish is incidental and will help or hinder the sale only in the light of the customer's remembered experience with that fiber or finish. As long as satisfactory wash - and - wear performance is obtained it makes no real difference whether cotton or synthetic is responsible; the technology behind the performance is taken for granted.

Of course, in use, the actual feeling of comfort, the consciousness of being well dressed, and the recognized service and performance values will build an impression of like or dislike for the fiber or finish and this will affect future decisions. From experience, observed differences emerge and customers generally recognize that resin-finished cellulosics are not the same as synthetics.

The + and — of Cotton and Rayon. In the comparison of resin-treated cotton or rayon with the synthetic fibers, cottons are more absorbent, a plus for comfort but a minus for dimensional stability and rapid drying. Resin-treated cellulosics have been improving as research on new resins and new softeners produces better products. While still far short of perfection, they can be made presentable with very much less wash-day labor than the untreated fabrics and in many applications they require only light touch-up ironing. Besides, whatever ironing is needed can be done with appreciably less effort and time.

The treated fabrics resist mussing and soiling in wear and thus stay fresh-looking longer than the untreated fabrics. Resins aid in stabilizing goods against shrinkage although only the best applications exhibit the necessary durability to repeated launderings. Where minimum shrinkage is a necessity, the mechanical compressive shrinkage method of stabilizing cottons is still the only way to get shrinkages of 1% or under.

On the other side of the coin, resin finishes often impart a stiffness or roughness which may not be desirable. Resin-finish effects frequently diminish noticeably with repeated washing. In laundering, resins often discolor, retain oil spots or other soils and stains, scavenge soil from a wash load, and otherwise fail to come clean.

A very pertinent effect of resins is that they invariably and without exception degrade strength, tear resistance, and abrasion resistance of all fabrics to which they are applied. This degradation can continue to the point of tendering fabric beyond use if chlorine-retentive resins are used on goods normally bleached in laundering.

Run - of - the - mill resins often break down and produce disagreeable odors, especially in warm humid climates; and all formaldehyde-condensate resins on fabrics assembled in quantity invariably exude the characteristic smell of formaldehyde, often to a disagreeable and uncomfortable extent.

The + and — of Synthetics. The synthetic fibers have properties which usually are not changed by use and by washing methods. The properties of shape retention, dimensional stability, and rapid and smooth drying are inherent in the fiber and last the life of the fabric. As wash-and-wear they function better than the resin-treated natural fibers.

These properties are primarily the result of the hydrophobic nature of the fibers. Hydrophobic fibers do not accept water internally, therefore they do not soften

To the consumer, the identity of the fiber or trade name of the finish is incidental.

Run-of-the-mill resins often break down on the fabric and produce disagreeable odors.

Fuzzy balls collect on the surface of some fabrics made with synthetic fibers or blends.

and swell and become distorted when wet. Their yarn and fabric configurations do not change with alternate wetting and drying, so the fabric surface appearance is not altered much in laundering and dimensional changes are of a low order of magnitude. The water, which is all on the surface, shakes off and the fabric dries rapidly. This same feature prevents such fibers from absorbing body moisture, and garments made from them can be warm in summer and clammy in winter, especially when worn next to the skin.

On the other hand, there are less favorable aspects of synthetics, such as sensitivity to heat, poor colorfastness of some dyeings, oil staining, graying and yellowing of whites, odor retention, static attraction, and pilling. Heat sensitivity makes it necessary to be very careful not to fuse, glaze, or distort fabrics with an iron if touch-up pressing is ever done.

The dyeing of some colors on some synthetics is quite difficult and frequently dyes will come off with rubbing or will transfer during storage or when heat is applied. Some synthetics will absorb grease, fats, and oils into the fiber so that subsequent washing or bleaching will not remove them. Whites that are grayed or yellowed are difficult or impossible to restore. Related to the problem of oil absorption, skin oils are absorbed and odors persist even after laundering.

Some wearers, especially women are annoyed by static build-up on synthetic-fiber garments, which causes clinging, wrap-around, and electric shocks. Fuzzy balls accumulate on the surface of some fabrics made with synthetic fibers or their blends with other fibers. This pilling renders fabrics unsightly and often unserviceable.

With Wash-and-Wear It's Give and Take. In the light of so many short-comings it may appear miraculous that wash-and-wear has gained any customer acceptance whatsoever. Fortunately, all of the possible deficiencies rarely occur together in any particular application. Also, the consumer is coming to the realization that compromises must be made in the selection of performance characteristics. To gain a relief from the chore of ironing, more care must be given to laundering methods; to have wash-and-wear, certain other properties must be relinquished and certain limitations accepted, at least until advancing technology can provide wash-and-wear properties without sacrifice or impairment of traditional characteristics.

Some wearers, especially women, are annoyed by static build-up of the synthetic fibers.

The customer understands these things better than the ad writers do. If only the professional drum-beaters would face up to reality and make an honest presentation of a product! Without a head-in-the-sand attitude toward the short-comings of wash-and-wear and without frequent outright dishonest misrepresentation of the facts, wash-and-wear promotion would be given more credence by the customer. The customer knows she can't eat her cake and have it. She is willing to trade attributes of textile products if she is given the facts on which to base her selection. She will arrive at the truth eventually by trial and error and, in the long run, will respect the manufacturers who told her the truth and resent the one who attempted to gain an advantage by means of flim-flam.

If wash-and-wear does not serve ultimate utility it becomes only a "gimmick" based upon novelty and as such will suffer the rapid demise of novelties. That the concept of wash - and - wear with its bright promise of release from ironing board drudgery has passed beyond the novelty stage is indicated by the fact that it is a sufficiently powerful incentive to consumer buying to keep customers coming back for more in spite of the shortcomings of a great deal of merchandise that was rushed to market with inadequate development, over-enthusiastic performance claims, or sometimes with an out-and-out misrepresentation of the "quick buck" artists. It can lead to a brisk and continuing market if the textile industry along with the garment industry is flexible enough to evolve a truly sound wash-and-wear product.

What Wash-and-Wear Needs. Basic research on special finishes, on fiber utilization, and on fabric constructions must be actively pursued by the textile industry. In the garment industry, experimentation is needed on the best methods of utilizing the new fabrics in garment design and construction. This area of development of wash-and-wear products has lagged sadly behind fabric development, but recent increased awareness in the garment industry of the role of the garment maker in either making or breaking wash-and-wear performance has brought about promising improved practices which must be further developed in order to keep pace.

It is difficult to convince an industry based to a large extent upon the planned obsolescence achieved by seasonal styles in fabric and garment pattern and design that there should be fundamental and enduring changes in manufacturing methods to accommodate these new wash-and-wear fabrics.

Also faced with the need to adapt to reality is the laundering and drycleaning industry, which cannot ignore the importance of research into methods of handling wash-and-wear textiles. It is true that the chief advantages of wash-and-wear accrue to the home launderer; however, these articles *do* get sent to the laundry. While it might be considered that new textile developments should be practical and be engineered with commercial laundering and clean-

ing methods in mind, the laundries have an obligation to their customers as professional cleaners of textiles to be flexible enough to cope successfully with any cleaning problems that confront them. The home laundry machine industry was quick to see the business potential in providing machines capable of doing justice to modern fabrics.

Many sins of commission and omission have been made in the name of wash-and-wear, but the concept has risen above them. There is an increasing and very healthy awareness in all phases of the industry of the remaining problems to be overcome. Fundamental research at fiber, fabric, and finish levels is making progress against basic deficiencies. Resins have improved considerably and finishers are learning that care in application pays off.

Some of the fabric producers are facing up to the fact that resin finishes require sturdier fabrics and are upgrading their constructions. Garment makers are facing up to their responsibilities of making good wash-and-wear garments from good wash-and-wear fabrics. There has been a flurry among the trade associations to hold symposia and lectures on all aspects of wash-and-wear.

The trade papers are filled with clamor for standards to guide all branches of the industry and with demands for more honest and realistic advertising. There is response from the customer in the form of increased demands of wash-and-wear and increasing awareness of the need to buy quality instead of price alone.

Although wash-and-wear is a development "with a past," all of these signs are a portent that it is also a concept with a future.

New Dimension in Textiles *(from page 85)*

grey mills in evaluating constructions designed to more effectively withstand resin treatments. Plants also found that preparatory operations had to be just as thorough as before, that a chemically clean fiber was essential if the proper reactions were to take place in finishing.

Despite much progress, many problems still remain, and no one would dare say that resin-treated cottons have reached their ultimate state of development; or that as a fiber, cotton is invulnerable to large-scale encroachment by man-made fibers and blends. Most assuredly, as new resins and chemical modifications come about, they will offer improvements over existing products and processes. But meanwhile, plants must properly utilize the best available products, and exercise rigid control over their application if consumer interest in wash-and-wear is to be nurtured.

As resin finishing becomes more complex, one factor will become increasingly evident. The plant which wants a share of the market will have to maintain an experienced technical and plant group for the proper evaluation of new products and processes and for their translation into efficient production routines.

Scientific achievement will undoubtedly continue to play a big role in the wash-and-wear field. But in a competitive economy, with many industries participating, the fields of promotion and advertising, merchandising and marketing cannot be neglected, as this series of articles also tries to emphasize.

That some of the papers show strong similarities of opinion regarding the current status of wash-and-wear and the faults which need correction points up the need for unified industry action if wash-and-wear is to become an established product of the future.

Atomic rays shed new light on the laundry process

■ CLEANER clothes for all—and peace in the chemistry laboratory—may result from a report to the American Chemical Society's 134th national meeting.

"Tattle-tale gray," caused by dirt from the laundry water re-deposited on clothes, has been reduced by adding a synthetic gum called CMC (carboxymethyl cellulose) to laundry detergents, chemists generally agree. But how the gum does this, and how its action in the washer might be improved, have been sources of considerable contention among scientists in the field, according to chemist James W. Hensley, manager of the nucleonics laboratory of the Wyandotte Chemicals Corp.

One theory has been that the gum coats the fibers of the clothes during washing and prevents soil particles from clinging to them, Mr. Hensley explained. A number of scientists have attempted to measure the adsorption of CMC by cotton, but the results have been contradictory—some finding that it was adsorbed, others that it was not. The results were inconclusive because the amounts involved are so small that they cannot be detected by the usual chemical techniques.

To bring about a better understanding of the complex factors in the seemingly simple operation of washing clothes—and to contribute toward peace among detergent chemists—Mr. Hensley decided to settle the question by "tagging" the CMC with radioactive carbon atoms, which can be detected in extremely small amounts.

First it was shown that cotton will not adsorb CMC from solutions of the gum in pure water, the chemist reported. But when detergents were present, and a metal was in the solution (such as sodium from salt), it is adsorbed.

Measurements showed that there would be adsorption of the gum on cotton under actual washing conditions. In the case of wool, nylon, Orlon, acetate and rayon, the adsorption would be much less, it was found.

Wash-and-Wear: Progress and Problems

by J. D. Reid, R. M. Reinhardt, B. M. Kopacz, and L. A. Fiori

Southern Regional Research Laboratory[1]

Exclusive

Broadcloth print skirt, resin-treated in garment form, retains sharp pleats after many launderings and remains unmussed during wearing.

THE PURPOSE of this paper is to outline briefly some of the progress that has been made in the development of wash-and-wear cottons and, more particularly, to review the numerous problems that still remain to be solved. It is felt that by directing attention to these problems a better understanding of the over-all difficulties by all segments of the industry might be achieved.

This understanding is especially necessary in a development such as wash-and-wear, since the performance of the ultimate product is dependent on the contributions from the individual processing steps that lead to it.

Present research is opening up such promising avenues of approach that it can easily be predicted that most apparel and a large proportion of the cotton fabrics for household use will be processed for wash-and-wear properties in the near future. In fact, it is estimated that two billion yards of cotton were resin treated in 1957 for wash-and-wear and other properties (38)[2]. It is expected that this year the yardage will be considerably higher.

The Development of Wash-and-Wear Fabrics. The development of wrinkle resistant cellulosic fabrics began some forty years ago when Sir Kenneth Lee posed a project to a newly formed research organization at Tootal Broadhurst Lee Co., Manchester, England[3]. The purpose of the work was to develop wrinkle resistant properties in cotton fabric similar to those that are natural to wool. The early work in this field involved resin treatment, since these materials and their components offered the most practical possibilities.

As early as 1919 it was found that cotton could be made somewhat wrinkle resistant by reacting it with acidified formaldehyde. Researchers found that phenol-formaldehyde resins gave cotton wrinkle shedding properties, but these early developments were commercially unsuccessful since undesirable collateral properties

[1]One of the laboratories of the Southern Utilization Research and Development Division, Agricultural Research Service, U. S. Department of Agriculture.

[2]Numbers in parentheses are references at the end of this article.

[3]The mention of organizations and commercial products should not be construed as an endorsement by the U. S. Department of Agriculture of these over others not mentioned.

J. David Reid, coauthor of this article and head of Chemical Finishing Investigations at SRRL, shows a wash-and-wear cotton garment to Jean Carter, Maid of Cotton for 1958.

About This Article

■ A brief outline of the progress that has been made in the development of wash-and-wear cottons is presented. Specifically, the existing problems are reviewed with the purpose of pointing to the contributions required from all segments of the industry to produce a truly wash-and-wear product.

The contributions of yarn structures and fabric geometry as a sound basis for resin treatment are pointed out. Resin treatment involves such considerations as the effects of desizing, bleaching, washing, mercerizing, and dyeing. Proper selection of resin, catalyst, and suitable curing and aftertreatments are also considered. Final contributions of garment construction are most important to produce the true cotton wash-and-wear garment.

Through research and understanding of all the problems the cotton textile industry is fast approaching the production of a true wash-and-wear all-cotton garment.

overshadowed the desired effect.

Next was the discovery that application of urea-formaldehyde resins to cellulosic textiles imparted dimensional stability as well as some measure of wrinkle resistance. Development of melamine-formaldehyde resins followed, producing finishes better suited to cotton.

Wash-and-wear garments, as such, were pioneered by synthetic fiber manufacturers and at the outset immediately drew considerable consumer interest. The cotton industry was quick to realize the potential magnitude of the new market and immediately began an intensive research effort to produce an all-cotton wash-and-wear product.

Since the initial research in this field, numerous organizations have worked to effect improvements. Minor modifications in fabric constructions were made to improve the tear and tensile strength of fabrics. New catalysts as well as improved finishing agents were developed. With the accumulated experience in the application of resin-formers, primarily for dimensional stability and incidentally for wrinkle resistance, and because of continued improvements in application techniques, the rapid development of a minimum care cotton followed naturally.

However, as the technology of resin finishing progressed, it became certain that no finish, by itself, would produce an ideal wash-and-wear garment. To date, an ideal wash-and-wear garment, synthetic or cotton, has not been produced.

As the problems become clearer, it also becomes obvious that the industry is attempting to attain a goal that is ill-defined. An acceptable definition of wash-and-wear and the establishment of rigid performance standards seem essential if quality garments are to be produced. Presently, ASTM is considering the following definition: "A wash-and-wear fabric is one that can be made into a garment that will satisfactorily retain its original neat appearance after repeated wear and laundering with occasional or no ironing" (6).

P. J. Fynn of J. C. Penney Co., at a recent conference of American Home Laundry Manufacturers' Association, explained wash-and-wear in this manner: "Wash-and-wear, in my opinion, can have only one meaning. It applies only to a garment which, when laundered according to a reasonable procedure without any ironing, would

be worn willingly by a reasonably fastidious person, in public, for activities appropriate to the garment" (11).

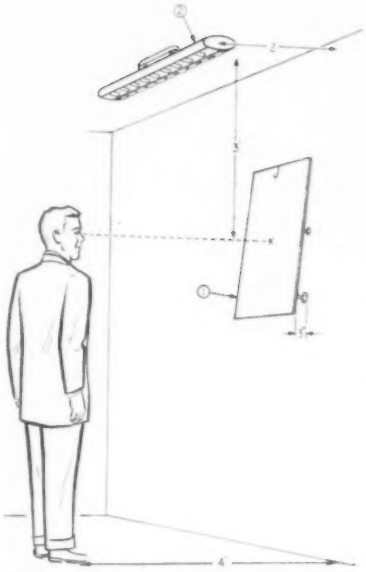
It seems that the ultimate test of wash-and-wear is consumer acceptability and that no combination of established laboratory tests can predict this performance with any degree of certainty. The "crease recovery angle" (amount of recovery of a sample of cloth creased under standard conditions) is generally cited as a measure of wash-and-wear qualities. Unfortunately, this is not the case. Although the crease angle seems to correlate fairly well with resistance to mussing, and most wash-and-wear fabrics do have a good crease angle, it often does not correlate at all with wash-and-wear qualities.

Also, wet crease recovery angles have been determined, but their relationship to practical use is not clear. Since appearance is the principal factor of consumer appeal, subjective evaluations as currently proposed, combined with physical testing data, might prove a satisfactory yardstick for the present (18, 19, 38).

Various methods for a subjective evaluation have been proposed and these vary considerably due to the absence of trade standards and because each laboratory develops performance test methods suitable for its own product.

The American Institute of Laundering has announced that strength standards for wash-and-wear should be determined after 24 launderings, since damage does not appear until after the 13th to 20th laundering. These include 20 launderings as recommended for all-white material, plus 4 launderings as recommended by the manufacturer of the particular wash-and-wear garment. Appearance tests have been proposed which call for a visual inspection after 5 launderings (2).

The Problems. Cotton fabrics are resin treated to obtain wash-and-wear properties. Unfortunately, however, satisfactory wash-and-wear performance properties are usually accompanied by losses in other important textile properties. These losses could be minimized by an understanding of the



Lighting system for evaluation of wash-and-wear fabrics and garments, as recommended in the test methods developed by Du Pont Co. Key to numerals: 1—white board 24" x 30"; 2—4' long, 2-bulb white fluorescent light fixture.

fiber movement involved and the attainment of an idealized geometry of fabrics and component yarn structures. Contributing factors such as yarn twist and size, fabric weave and construction (ends and picks per inch), color pattern and shades, and fiber properties which affect the esthetic element so necessary to "sell" wash-and-wear fabrics to the consumer must be studied and understood if a fabric is to be engineered for maximum wash-and-wear performance.

Finishing problems revolve around the principal chemical treatments and subsidiary treatments, including after-treatments. The proper resin must be chosen to do a particular job. However, prior to the application of the resin, fabrics should be suitably prepared for the treatment. Poor desizing, or inadequate washes after bleaching, mercerizing, or dyeing will create problems with resin reactivity. With the introduction of reactive resins into the treatment, a choice of compatible dyes is important.

Other problems directly associated with resin treatment include choice of catalyst, compatible auxiliary agents, curing time and temperature, and proper afterwash. Depending upon the resin used, a thorough alkaline afterwash may be necessary and sometimes a perborate bleach needed. Where strength losses are critical, after-mercerization or the application of softeners may be helpful.

Care must be exercised in all steps of the finishing operation to produce a cotton fabric suitable for minimum care garments. Above all, the textile engineer needs a clear understanding of the effects of all phases of textile processing, from choice of fiber quality to garment design and construction for the development of a true wash-and-wear product. Some of these problems are considered in more detail below.

Problems of Fabric Structure. Acceptable performance of wash-and-wear cotton garments depends on the physical properties of the fabric, as well as the adequacy of the resin formulations used. Obviously, the structure of the yarn and fabric (twist, yarn size, ends and picks per inch, weave) and the physical properties of the fiber assemblies involved, all react interdependently.

Resin treatments impart the required wrinkle resistant properties to the fabric but undesirably alter the original physical properties of the fabric system. Generally, wash-and-wear treatments reduce the functionally important tensile and tear strength properties of fabrics. To complicate the problem further there is a lack of positive correlation between in-service performance and laboratory tests. For example, four methods are available for determining tear strength (35), which makes the performance evaluation of the effect of resin treatments on this fabric property extremely difficult and somewhat subjective.

It would appear from reports in the literature that possibilities do exist for combining technological, decorative, and economic factors to provide the best possible basis to improve the resin treatments. Theoretically, the fabric designer, finisher, and manufacturer could produce a fabric having maximum inherent wrinkle recovery properties of the required tensile and tear strength levels after proper chemical treatment. But the consumer demands and gets a great

variety of fabrics woven in a multitude of constructions, weights, colors, and patterns.

To determine individual wash-and-wear specifications for this great number of fabrics is a monumental task. However, some general concepts have been developed which should apply to most fabrics and may prove useful at present in place of more definitive data.

The most serious obstacle to the development of ideal wash-and-wear fabrics appears to be the barrier of idealized constructions versus tradition and style. For many staple items performance property standards have been established, based on tradition and a century of progress. Many of these properties are needed and justified; others are perhaps merely based on the quality of cotton needed to manufacture a particular type of fabric. For example, an 80 x 80 print cloth must meet certain strength requirements, since the cotton needed to efficiently produce its yarns had to be of a certain length, fineness, strength, etc.

Traditionally, specified strength standards have been carried along from year to year without knowing whether this level of tensile strength is really necessary to meet the over-all performance requirements of this type of material. The same can certainly be said for another important performance property—tear strength.

What is needed is an over-all re-evaluation of the in-service performance requirements of at least our staple items where wash-and-wear properties are important, to see whether a new set of fabric property standards should be established. This appears logical, since the physical properties of the component fibers of wash-and-wear fabrics are altered appreciably while under the restrictions of standard constructions. Therefore, performance criteria of untreated materials should not be used as a sole basis for judging the acceptability of the material for wash-and-wear treatments.

The rapidity with which the wash-and-wear field is developing has limited publication of data based on a systematic and coordinated study of controllable yarn and fabric construction factors needed to produce fabrics of optimum wash-and-wear properties. As a result, only isolated information in this field is available.

These Are the Principal Problems of Wash-and-Wear

Wash-and-wear cottons are making remarkable gains in consumer acceptance. However, there are a number of opportunities for further improvement and the cotton textile industry should put forth increased effort in the following problem areas:

1. Develop improved fabric constructions particularly suited to wash-and-wear, including selection of best suited cotton fiber, optimum yarn size and twist, and fabric geometry.
2. Maintenance of good practices for fabric preparation for finishes, such as scouring, desizing, bleaching, and so forth.
3. Selection of the best combination of resin finishing agent, catalyst, and textile auxiliaries, considering the end-use of the fabric.
4. Enforcement of improved finishing techniques, stressing adequate cure and thorough afterwashing.
5. Proper garment design with meticulous attention to the details of cutting, fitting, and particularly sewing of wash-and-wear garments.
6. Establishment of standards which clearly describe the wash-and-wear qualities of the garment.
7. Adequate, permanent labeling, giving the classification and precautions necessary for laundering and caring for the garment.

Dribben (16) concludes that any structure that contributes to freedom of motion and lack of strain results in high crease recovery, for example, low twist, coarse yarns, high crimp, low thread count, more complex and loose weaves such as sateens and broken twills, and thick or heavy fabrics. In addition, lustrous fabrics such as sateens show wrinkles more easily than a corduroy. He also noted that the basic cloth should be strong enough to withstand at least a 20 per cent loss in strength, but mentioned that lower tensile strength did not always reduce wearability.

Barach (6) states that batiste-type constructions ordinarily require less ironing than broadcloth and oxford-type materials of similar weight and fiber content. Also, twill weaves and steepness of the weave affect appearance retention. With the same twill weave, heavier or coarser yarns showed better appearance retention after laundering. In this connection, a two-ply yarn construction usually performs better than a single.

The effect of yarn density on crease resistence has been studied by Ikeda and Okajima (17), who found that generally with plain, twill, sateen, and basket weaves, crease-resistance decreases with yarn density and approaches a constant value.

Lippert (20) reports that the use of structures which reduce the rigidity of the fabric and stresses on component fibers and which will decrease cover factors tend to produce a fabric having high crease-recovery properties. The effect of color also should be considered, since it is much more difficult to detect creases in a broken print pattern or light shades than unbroken surfaces or heavy shades. Williams (39) corroborates this latter conclusion by proving in a limited manner that optical properties of pattern and color have a powerful influence on appearance.

Rebenfeld (27) found that wet-finishing operations such as bleaching, mercerizing, and resin finishing alter fiber properties more than mechanical processing operations such as carding, spinning, and weaving. He also indicated that the relative magnitude of the changes of fiber properties due to bleaching and mercerizing treatments was not constant for all the cottons used, but was dependent upon the value of the original fiber property. Resin finishing, however, exerted a constant effect (decrease in fiber breaking stress and elongation) on all the cottons considered.

There is evidence that small constructional changes are already being made on wash-and-wear fabrics now being marketed. One department store chain is marketing

a specially constructed broadcloth (142 x 72) which is made with somewhat coarser filling yarns than are ordinarily used. Their advertising claims "minimum care" rather than wash-and-wear properties. From other sources there is also evidence, for this general class of fabrics, that the picks per inch are being increased and both warp and filling yarns coarsened in order to compensate for losses in tensile and tear strength.

Admittedly, many possibilities exist through the combination of mechanical-chemical effects to produce better wash-and-wear fabrics than are being produced at present. However, most structural changes proposed may have practical limitations. Although use of low twist yarns would, from a theoretical standpoint, assist in obtaining better wrinkle recovery properties, twist in the manufacturing cycle is a very important controlling element of manufacturing efficiency. A certain level of twist in yarns must be maintained in both warp and filling so that any radical departure from normal towards an "ideal" low twist must, at least until better manufacturing techniques are developed, be abandoned for some other approach. Of course, use of longer staple cotton fiber would allow use of lower twists but the higher quality cotton would also involve higher costs.

Use of coarse yarns also introduces changes in fabric weight, cover factors, and constructions, all of which tend to produce a fabric somewhat different in characteristics than the "standard" items the consumer is accustomed to purchasing.

Stronger component yarns of a particularly suitable fabric for wrinkle recovery properties are possible through selection of strong fibered raw cotton. This is particularly true with filling yarns which ordinarily exhibit tear resistance weaknesses due to low strength and the usually finer yarn number and lower twist than used in the warp in many staple items. Some of the new strong fibered cotton varieties might offer possibilities in this direction.

Although cotton variety is sometimes given credit in counteracting the deleterious effects of wash-and-wear treatments on tear and tensile strength, it is evident that the effect noted is the result of the better fiber properties used rather than the varietal effect—since varieties generally characterize the fiber properties. Changing from a Deltapine 1 1/16 to a Pima S-1 1½-inch cotton variety to manufacture the same type of wash-and-wear garment should result in a better fabric with better breaking and tear strength, since fiber properties are the dominant contributing factors to the improvement in fabric properties.

Insofar as using more of the complex and loose weaves to assist the mechanics of wrinkle recovery, it must be remembered that traditionally a great majority of the apparel and household markets is composed of plain and fairly tightly woven materials. Such staple items as print cloths, broadcloths, sheetings, and variations thereof have been engineered performancewise to satisfy specific market and consumer preferences. It would be wishful thinking to believe that any major structural changes required to make an ideal wash-and-wear fabric would also meet other end use performance requirements. The contrary is usually true; that is, structural changes which increase the mobility of the yarns in a fabric and improve tear strength usually adversely affect other important properties, such as tensile strength, crimp, dimensional stability, appearance, etc.

The stiffening effect of chemical treatments on component fibers and yarns changes their bending property considerably, which has an important bearing on the properties of the resultant wash-and-wear fabrics. It would be very helpful to be able to predict dimensional changes and new physical properties of a treated fabric in terms of the physical properties of the untreated fabric. It is believed that recent theoretical developments relating the structural geometry of yarns and fabrics to physical properties and dimensional changes (1, 3, 4, 14, 24, 25, 34) should be of considerable assistance in defining the fabric constructional limits permitted in the development of better wash-and-wear fabrics.

The U. S. Department of Agriculture has contracted with the Fabric Research Laboratories, Inc., Dedham, Mass., to conduct research to improve the tear strength of cotton fabrics, with emphasis on fabrics intended for resin treatment. Commercially available cotton apparel fabrics, such as print cloths, broadcloths, twills, and sateens are being studied before and after application of resins and other treatments to determine why these fabrics lose tear strength when treated.

These studies have indicated the modifications in yarn and fabric structures required to obtain improvement in tear strength. They have been embodied in 32 experimental constructions which are now under study. The results obtained in this investigation, which is expected to be completed in 1959, should be very helpful in the development of better wash-and-wear cotton fabrics.

Pretreatment Problems. After the most suitable base fabric, specifically designed and constructed for a particular wash-and-wear end-use has been obtained, optimum pretreatments are selected. A thorough desizing is particularly important. Residual starch, which is chemically similar to cellulose, can react with the resin and the resulting material may or may not be removed in later washings. In any case, a misleading add-on results from this reaction, limiting the efficacy of the treatment.

Caution must be observed following pretreatments such as kier-boiling and mercerization, to insure that the fabric is free from residual and interfering chemicals such as alkalies. Catalysts are especially sensitive to alkali, since most are acids or acid formers. Retained alkali is often the unsuspected cause of poor curing of resin-finished cloth.

Care must be taken in the selection of wash-fast dyes that will be compatible with the subsequent resin treatment. Although resin finishing improves the retention of some direct dyes, many dyes, unfortunately, are more light sensitive after resin treatment and should be avoided, particularly on

fabrics for sport shirts and similar garments which will be exposed often to sunlight (8).

Mercerization has become an object of intense study in the finishing of cotton fabrics to obtain wrinkle-resistant properties. The beneficial effects of premercerization were recognized in the early phases of research on resin treatments. It was apparent as early as 1929 that the wet, swollen cellulosic fibers were more reactive with methylol-type resin formers (36). Recently, the Rhode Island Section of the AATCC reported that under certain conditions premercerization reduces loss of tensile strength with little effect on crease recovery, resistance to abrasion, or shrinkage control (31).

Selection and Application of Resins. Cotton contains many reactive hydroxyl groups that can serve as points of attachment for a countless number of chemicals. Some resins polymerize between the fibers and offer surface effects only. Others react with cellulose to cross-link adjacent cellulose chains. Cross-linked cellulose has lower elongation and lower breaking strength and for this reason compensating strength factors must be introduced either by mechanical reinforcing or chemical treatment.

Usually softeners are incorporated with the resin to minimize tear strength losses. The softeners allow fibers and yarns to slip on each other, which tends to distribute the stresses.

New resins and new catalysts, as well as resin blends, have contributed greatly to the success of the resin finishing of cotton fabrics. Notwithstanding the progress made, there are shortcomings to the resin-formers in use today.

The methylol ureas or urea formaldehyde resins, commonly called "UF," are the cheapest and most widely used. These were the first resins successfully used for wrinkle resistance, and for many of the earlier years they accounted for the larger part of the resin consumption by the textile industry. However, urea-formaldehyde treated cotton retains chlorine readily which leads to the formation of acid and consequent degradation. The resin bath has a limited storage life because of a tendency to polymerize prior to application to the cloth.

Pat Carite demonstrates wash-and-wear properties of cotton organdy dress, with full, gathered skirt, resin-treated as a garment.

Despite these shortcomings, it is successfully used in wash-and-wear garments particularly on yarn dyed materials and fabrics with printed patterns. In Europe, it is used to a greater extent proportionally than in this country because hypochlorite bleaching is uncommon there.

Although higher in cost, melamine-formaldehyde resins are better suited to cotton application. The melamines impart greater wrinkle resistance and better strength retention to the finished fabric. However, most of these resins are chlorine retentive and the treated cloth often turns yellow in contact with chlorine bleaches.

Some resins are modified by methylation, principally to block some of the reactive sites and thereby diminish danger of chlorine damage. The tendency of melamine resins towards yellowing on bleaching can be greatly reduced by such modification. Metal catalysts, too, reduce yellowing.

One of the newer finishing agents to achieve wide-spread acceptance is dimethylol cyclic ethylene urea. This reactant functions mainly as a cross-linking agent with little or no polymer formation. CEU may be considered a modified urea-formaldehyde resin with the added group blocking the addition of chlorine during bleaching. It now holds about 25% of the textile resin market and is less expensive than the melamines. It is very attractive economically for producing high quality products since only small add-ons of the resin are necessary to obtain wrinkle recovery angles (Monsanto method) as high as 280 - 300° (warp plus filling). The well-cured resin is durable toward careful laundering but is removed by commercial laundering if the souring step is allowed to become excessively acid (23).

A number of other finishing agents used to a small extent include acetylenediurea resins prepared from glyoxal and urea, the hydantoin resins, acetone-formaldehyde-starch resins, acrolein-formaldehyde resins, acetone-formaldehyde resin, dialdehyde cross linkers, and condensation products of formaldehyde and alcohols.

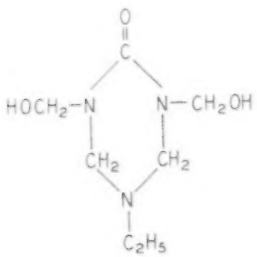
Among the newer developments are non-nitrogenous cross-linking agents and triazones. The epoxy resins are non-nitrogenous and therefore believed to be completely resistant to chlorine damage. Recent reports indicate that a combination of epoxy and dimethylol ethylene urea produces a finish which is permanent to laundering, retains the resistance to chlorine damage of the epoxy resin, and has good crease recovery (7). Other combinations include epoxy with urea-formaldehyde and epoxy with melamine-formaldehyde (33, 40). These combinations are also chlorine resistant. Unfortunately, at present there is a considerable loss of strength due to the high acidity of the catalysts commonly used with epoxy agents.

Another new development, the "Belfast" finish, recently announced by the Deering-Milliken Research Corp., is stated to be non-nitrogenous and non-chlorine retentive. This finish has the

chemical characteristics of a cross-linked cellulose ether. Although the line of demarcation between "resin cross-linking" and "chemical modification to give cross-linking" is not distinct, the new finish falls definitely into the latter category.

Of particular importance is the use of alkaline rather than the acid type catalysts. Acid catalysts are employed with methylol resins and the epoxides and nearly always produce some acid degradation. It is possible that this type of finish will introduce a new era in textile finishing. The use of cross-linking etherification agents with alkaline catalysts is definitely one of the problems challenging the textile chemist.

The triazones, commercially available since 1953, have increased greatly in use during the last year. These compounds are prepared from urea, formaldehyde, and inexpensive primary amines such as ethyl amine. The resulting compound is a six membered cyclic ring similar to ethylene urea but with the amine inserted between the two vicinal carbons:



This finish on cotton resists removal by acid souring in laundering better than the cyclic ethylene urea. Furthermore, the tertiary amine group appears to neutralize acids such as are formed on ironing after a chlorine bleach. Strictly speaking, cotton treated with triazone materials may not be characterized as nonretentive of chlorine but rather as resistant to chlorine damage. These finishes are closely competitive in price with ethylene urea and have the advantage of somewhat more stability to commercial laundering and bleaching.

However, if short-chain amines are used in the preparation of the triazone, a characteristic strong fishy odor can result unless the fabric is thoroughly washed after treatment. From the consumer's viewpoint, this is not completely bad, since he is assured that the resin-treated fabric will be washed with the utmost care before he receives it. To eliminate the odor completely it is necessary to give a perborate bleach or alkaline wash and a careful laundering.

Some consumers have complained of buying shirts with a bad odor, particularly those packaged in a transparent plastic bag. This is due to a small amount of residual amine products left because of poor wash procedure. It is even more noticeable if the fabric is wet with dilute sodium carbonate solution. However, the finish is stable and does not continue to break down so that any original odor will be removed for all practical purposes by the first laundering.

The triazone resins are a distinct advance in wash-and-wear technology but even better resins appear to be possible and are now being studied in the research laboratories. A number of new finishing agents are being readied for early introduction into the textile chemical market.

Selection of Catalysts and Additives. Selection of a proper catalyst will reflect in wrinkle recovery value, reaction rate, resistance to chlorine retention or fabric damage, resin bath life, and the development of odors after curing. A proper balance of these effects determines the usefulness of any catalyst and sacrifices cannot be made merely to produce maximum wrinkle recovery.

The older latent catalysts, such as diammonium phosphate and ammonium chloride, may produce odors and can interfere with the formaldehyde components of some resins, decreasing bath life. Alkanolamine hydrochloride types do not react with formaldehyde and are more efficient. Metallic inorganic salts such as magnesium chloride and zinc nitrate are used in great quantity (12). They are especially efficient with the melamine-formaldehyde type resins.

These inorganic salts are generally used at higher curing temperatures and produce very good crease angles with less possibility of chlorine damage or odors developing in the treated fabric. Some metal catalysts are retained by the finish and seem to effect a neutralizing action in decreasing damage by acids released on ironing of bleached fabric.

In addition to the catalysts in the resin finishing mixture, auxiliary agents such as silicones, acrylates, and polyethylenes are added to complement the base resin. These additives act as built-in softeners and thereby help reduce losses in tensile and tear strength and improve the hand and wrinkle resistance of the fabric. However, some silicone and acrylate additives impart an irreversible wet soiling property during laundering at high temperatures, because they form a tacky film on the fibers (22). Polyethylene softeners on the other hand are more resistant to wet soiling because of their less tacky nature.

Drying and curing greatly affect catalytic activity. Sometimes drying and curing are conducted in one operation, but are more commonly carried out in two steps. Proper rates of drying are more or less dependent on the fabric weight. Rapid drying causes migration of the resin solution to the surface of the goods and results primarily in stiffness and low tear strength. Overdrying to less than 10-15 per cent moisture content should be avoided.

Curing time and temperature are directly dependent on the resin-catalyst combinations and concentrations as well as on the type of equipment used. Curing conditions depend upon the oven capacity, which in turn is a function of heat transfer efficiency. Incomplete cures may yield deceptively good crease angles but lead to poor durability and higher chlorine retention. Therefore a "hard cure" is essential for good durability.

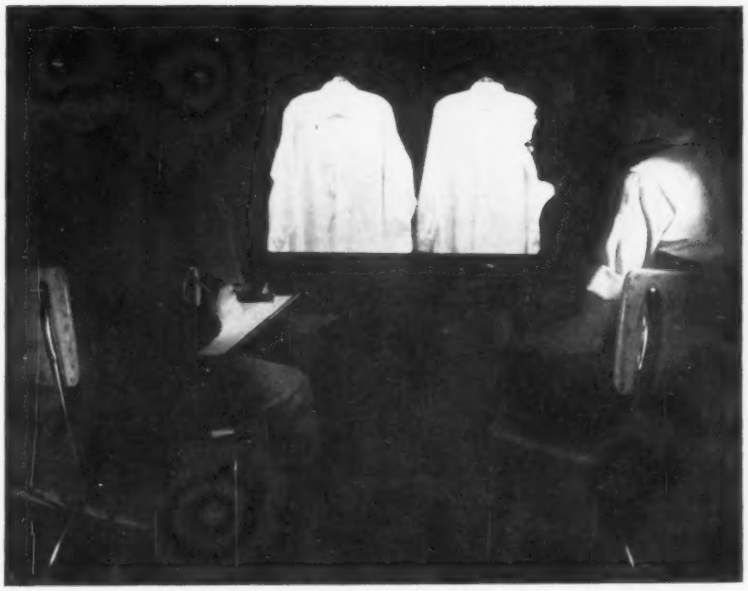
If fabrics are poorly tentered during curing no amount of pulling can straighten the weave. Such skewed fabrics make it impossible to construct a garment that hangs well and is pleasingly matched. Complaint has been made that European fabrics are much superior to American because of the care taken during finishing (13).

After-Treatments. Processing of a fabric is not complete until the material has been thoroughly washed. After introducing reactant chemicals into the fabric, unreacted materials must be removed after the treatment to prevent any further reactions. Further reaction may cause the formation of permanent creases in the folds of the fabric during storage; the development of unappealing odors, particularly formaldehyde vapors; loss of strength; decrease in durability of the resin finish; discoloration; development of chlorine retention; etc.

In order to reduce processing costs and meet competition, a final wash to remove catalyst and by-products of the reaction is often avoided. In many of these cases, the catalyst continues active and a reversal of reaction occurs, producing formaldehyde. In many fabric stores, special ventilation is required to remove the vapors which are irritating to eyes and nose. Furthermore, even though the fabric is rolled, an occasional crease is set into the fabric by the continuing reaction. Such creases cannot be removed from a completed garment, even with a steam iron. This little-known cause of customer prejudice against resin-treated cottons could be removed by a simple after-wash with dilute soap and soda, a treatment which would also improve hand, particularly if softeners were added.

Not only does the evolution of formaldehyde signal a loss of cross-linkage, and, therefore, crease resistance, but it may also make the fabric chlorine retentive. In a recent article, Bacon and coworkers state that, "It is evident . . . . that washing to neutralize the treated fabric after curing is a must if the potential of severe chlorine-retention damage after laundering and bleaching is to be eliminated" (5).

It has been suggested that after-mercerization produces strengthening to counteract losses due to resin treatment. A patent issued in 1935 states that the swelling and shrinking action of the mercerizing caustic increases the strength of resin-treated linen (37). Recent preliminary work on aftermercerization of methylolmelamine resin-treated cotton fabrics has shown that as much as 20 per cent improvement in tear strength and 100 per cent in abrasion resistance over the treated fabric is possible. Wrinkle recovery angle is only slightly diminished by the treatment (21). Further work is in process (30).



Crease recovery angle often does not correlate with wash-and-wear qualities; since appearance is the principal factor of consumer appeal, subjective evaluation (shown above being conducted at U. S. Testing Co.), combined with physical tests, may prove a satisfactory yardstick for the present. Various methods for subjective evaluation have been proposed.

Another type of after-treatment which offers considerable promise is the application of reagents which will react with free amino or amido groups of the resin finish and thus reduce sites for chlorine retention. Of the numerous possible reagents for such treatment, Compton (10) has used acrylonitrile to cyanoethylate resin-treated cotton. He states that in addition to resistance to chlorine, there is greater retention of resin and of crease recovery properties after repeated laundering.

There is some indication that collateral benefits can be achieved by the use of rot- and flame-retarding cross-linkers in the resin mixture (15). These compounds, of course, must be selected to add to the wrinkle-resistant properties of the fabric rather than to detract from them. The ideal resin, however, incorporating many desirable properties in one chemical compound, is still being sought. Resins and cross-linking agents used currently do exhibit some degree of rot resistance but this is minimal. These compounds somewhat inhibit or delay passage of fungi and do not support a flame per se.

Although cotton lacks the thermoplastic property of synthetics, some measure of thermoplasticity is attainable by means of acetylation of cotton fabric. Acetylation is primarily used to produce heat- and rot-resistant cotton. It may be that suitable modification of acetylated cotton with other chemicals or resins could produce a new type of wash-and-wear finish (9).

Garment Design. A fabric, properly engineered and pretreated, finished with a good wrinkle-resistance resin and supported by sensible after-treatment, is a truly wash-and-wear fabric. But it will not make the garment by itself. Seams and sewing not designed for wash-and-wear consumer handling will detract from the appearance of the garment.

Seam pucker is a serious problem and many wash-and-wear garments, made from excellent, smooth-appearing cotton fabric, are ruined by a badly puckered pocket or panel seam. Cooperative work among thread manufacturers, garment makers, and sewing machine companies is required to completely solve the problem. All

three are seeking a solution. Special low-shrinkage thread and special sewing machines to sew with low tension have been made but there is still much room for improvement. Above all, the garment manufacturer must reconcile himself to slower and more careful sewing of garments if excellent wash-and-wear qualities are to be achieved.

Built-in neatness in garment construction is required to supplement the built-in neatness of the fabric. Zipper tapes, padding, underlining, belt, seam binding, tapes, and thread are typical examples of essential integral parts that must stand up. The garment maker also has problems in handling this new fabric since his machines are designed for processing natural cotton.

Yet another problem occurs when attempts are made to insert creases in resin-finished cotton, such as are necessary for appearance in trousers or pleated skirts. Much work is being done on this subject to enable cotton to enter fields now denied to it, such as in men's dress slacks. Work in which garments, as such, have been treated, pressed, and the resin cured, has shown that satisfactory non-mussing wash-and-wear cotton garments can be made (28). Other methods of accomplishing the same results are being worked on, such as utilization of cloth containing dried but not cured resin and "re-curing" garments made from resin-finished cotton (29).

Crease-resistant cotton is a new product and should be treated as such. Textile engineers must face wash-and-wear problems as a matter of product development rather than one of fabric construction or finishing (6).

Evaluation and Labeling. Efforts are being made to evaluate wash-and-wear garments, but accurate measurements are still a problem. It has been stated that, "The number one problem in the area of 'wash-and-wear' is quality control. As Dr. George Wham, Jr., chairman of the AATCC Wash-Wear Committee and director of textiles, Good Housekeeping Institute, notes, 'the concept is based on the fundamental belief that a wash-and-wear label must make a promise to the consumer—a promise that the garment she buys must fulfill.' It is the keeping of that promise that is the chief concern of the textile chemist, dyer and finisher" (32).

Consumer confidence has been sadly shaken by poorly finished goods which have been labeled as being wash-and-wear. P. J. Wood, in his interesting and humorous column "Inter Alia—Inter Nous" (41) has commented on wash-and-wear: "Whenever a new idea in finishing appears on the market, frequently the result of months, aye, even years of patient work, in some cases, there is always someone jumping in with a hastily improvised and half-baked imitation. In the interim between its glorious entry and its ignominious exit, it has done itself no good, but it has done the worthwhile products a lot of harm; so much so that what could have been a far-reaching general improvement in textile processing and a profitable idea to the finisher and converter, turns out to be a foul fiasco. Worst of all, the confidence of the purchasing public is shattered and this takes a long time to repair."

The over-all problem, then, is one of a firm establishment of public confidence in adequately labeled wash-and-wear garments. A step towards standardization of wash-and-wear evaluation has been taken with the publication of tentative test methods and standards by the AATCC Wash and Wear Committee (26). This group has proposed a system using five ratings specifying the procedure used: hand wash-drip dry, machine wash-drip dry, machine wash-tumble dry, or machine wash-line dry.

A number of companies such as the Good Housekeeping Institute, the United States Testing Co., and the American Institute of Laundering have announced plans lately to evaluate and issue tags for approved garments.

The restoration of public confidence, then, involves use of a scientific method of evaluation, labeling the garment in a manner which will be clear to the purchaser and which will be trusted by him, and backing up the labeling with an adequate guarantee. Incidentally, while hang tags are good as far as they go, the rating of the garment should be clearly printed on a label sewn into the garment. Hang tags are generally lost before the first laundering.

References

1. Adams, D. P., et al, *Textile Research J.* 26, 653-665 (1956).
2. American Institute of Laundering, TEXTILE INDUSTRIES 122, 74 (July 1958).
3. Backer, S., *Textile Research J.* 22, 668-681 (1952).
4. Backer, S., *Textile Research J.* 21, 703-714 (1951).
5. Bacon, O. C., et al, *Am. Dyestuff Reptr.* 47, P259-262, P272 (1958).
6. Barach, J. L., *Can. Textile J.* 75, 49-53 (Jan. 1958).
7. Borghetty, H. C., *Textile World* 108, 89, 91, 93, 95, 97, 99, 101, 103, 107 (Apr. 1958).
8. Brooks, R. A., *Dyer* 120, 161-164 (1958).
9. Buras, E. M., Jr., et al, *Textile Research J.* 27, 214-222 (1957).
10. Compton, J., and Etchells, W. R., paper presented at the 134th National Meeting of the American Chemical Society, Chicago, Ill., Sept. 1958.
11. *Consumer Repts.* 23, 81-86 (1958).
12. Cooke, T. F., et al, *Textile Research J.* 27, 150-165 (1957); TEXTILE INDUSTRIES 120, 100-102 (Dec. 1956).
13. Cowan, M. L., *Textile World* 108, 71 (July 1958).
14. Dorkin, C. M., and Chamberlain, N. H., *J. Textile Inst.* 43, T203-233 (1952).
15. Drake, G. L., paper presented at the 7th Chemical Finishing Conference, Washington, D. C., Oct. 1958.
16. Dribben, W. H., *Am. Textile Reptr.* 71, No. 20, 39, 41, 93 (1957).
17. Ikeda, S., and Okajima, S., *J. Soc. Textile Cellulose Ind. (Japan)* 11, 397-405 (1955).
18. Krumholz, G. R., Jr., *Modern Textiles Mag.* 39, 51-54 (July 1958).
19. Lawrence, E. W., and Phillips, R. H., *Am. Dyestuff Reptr.* 45, P548-550, P561 (1956).
20. Lippert, A. L., *Textile Research J.* 26, 128-135 (1956); TEXTILE INDUSTRIES 119, 109-112 (Dec. 1955).
21. Mazzeno, L. W., Jr., et al, *Am. Dyestuff Reptr.* 46, 719-724 (1957).
22. Mazzeno, L. W., Jr., et al, *Am. Dyestuff Reptr.* 47, P299-302 (1958).
23. Mazzeno, L. W., Jr., et al, *Am. Dyestuff Reptr.* (in press).
24. Peirce, F. T., *Textile Research J.* 17, 123-147 (1947).
25. Platt, M. M., *Textile Research J.* 20, 519-538 (1950).
26. Proc. AATCC, Committee on Wash-and-Wear, *Am. Dyestuff Reptr.* 47, P578-580 (1958).
27. Rebenfeld, L., *Textile Research J.* 27, 473-479 (1957).
28. Reid, J. D., et al, *Textile Research J.* 27, 252-259 (1957).
29. Reid, J. D., et al, *Textile Research J.* 28, 242-251 (1958).
30. Reinhardt, R. M., et al, paper presented at the 1958 National Convention of the AATCC, Chicago, Ill.
31. R. I. Section, AATCC, *Am. Dyestuff Reptr.* 44, P779-785, P790 (1955).
32. Schneiderman, I. P., *Daily News Record*, No. 149, sec. 2, p. 2 (July 31, 1958).
33. Schroeder, C. W. (assignor to Shell Development Co.), U. S. Patent 2,794,754 (June 4, 1957).
34. Schwarz, E. R., *Textile Research J.* 21, 125-136 (1951).
35. Steele, R., *Am. Dyestuff Reptr.* 46, 329-335 (1957).
36. Tootal Broadhurst Lee Co., Ltd.; Foulds, R. P., and Marsh, J. T., Brit. Patent 304,900 (Jan. 31, 1929).
37. Tootal Broadhurst Lee Co., Ltd.; Corteen, H., et al, Brit. Patent 437,361 (Oct. 25, 1935).
38. Wham, G. S., *Modern Textiles Mag.* 39, 49-50 (July 1958).
39. Williams, C. R., *Am. Dyestuff Reptr.* 45, P472-478 (1956).
40. Williams, C. R. (assignor to Monsanto Chemical Co.), U. S. Patent 2,804,402 (Aug. 27, 1957).
41. Wood, P. J., *Am. Dyestuff Reptr.* 47, 591 (1958).

Wash-and-Wear: Past, Present, and Future

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Exclusive

Wash-and-Wear Past

THE PAST ten years have seen great advances in the direction of muss-resistant and minimum-care textiles. This progress has resulted from intense individual and cooperative effort in many phases of fiber, fabric, and finishing technology. Projects in the general field of wash-and-wear development today carry the top priority in scores of research laboratories and experimental facilities. It will certainly not be for lack of interest or diligence if further significant improvements in wash-and-wear fabrics are not forthcoming in the next few years.

Approaches to Wash-and-Wear. It should be mentioned that there are at least four major approaches to the general goal of reducing the chores and expenses of apparel maintenance—not to mention the consumer's own current solution in owning fewer garments of lighter weight and skimpier area, and in investing in automatic appliances to reduce the manual labor.

One which enjoyed a popular revival a few seasons ago is what might be called the "pre-mussed" principle of wash-and-wear. Without intending any discredit to these seersuckers, puckers, and other semi-randomly contoured fabrics, their wash-and-wear virtue can be described as the fact that they look no different or more mussy after washing or a period of wear than when new. The range and applicability of materials of this type were greatly extended with the advent of some of the newer man-made fibers, which by their shrinkage or thermoplastic characteristics provided new techniques for producing these contoured surfaces.

Another rather short-lived development, the so-called "broomstick" finish, in which random criss-crossed crease lines were durably set into the fabrics, was also in this "pre-mussed" category. The newer random pleat finishes, produced by overfeed creping systems, belong in this general group also.

A second approach is the elastic materials, primarily jerseys and other knit types, which rely on the tensions of snug fit on the wearer to smooth out wrinkles from wearing or washing. Basic problems of dimensional instability have somewhat reduced the wash-and-wear value of some of these otherwise easily - cared - for materials, but progress to overcome these limitations has been made and can be expected to continue.

But as a generality it can be said that fabrics in these first two categories are what they are for reasons independent of their wash-and-wear performance. Though sporadic and somewhat half hearted promotional efforts have been made to feature the wash-and-wear advantages of these materials, such promotion has been largely on a basis of an "also" feature hoping to tip the scale with a small percentage of the public which otherwise might just as readily choose flat woven materials.

It is doubtful that even the most enthusiastic promoter of pucker or elastic materials ever dreamed of converting consumers to complete reliance on such fabrics to eliminate ironing-day chores. (In the domestics field, serious bids were made by the contour sheets, and later with less permanent success, the knitted contour sheets, which relied on the tensions of fit on the mattress to avoid the necessity of ironing at least the bottom sheet). In general, these materials have been "special case" items, moving in and out of fashion and popularity in the natural trends and sequence.

The first broad and strenuous campaigns to sell wash-and-wear as a new and highly significant fabric characteristic came with the other two types, those of the resilient and hydrophobic man-made fibers, and the "treated" fabrics of the natural and cellulosic fibers.

Whether or not wash-and-wear was a clearly defined objective in the minds of the polymer chemists as they concocted these newer synthetics, it was certainly obvious that some promotable feature,

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such as wash-and-wear, was necessary for success in winning major acceptance of these fibers in apparel uses. There were many obstacles to overcome in price and in problems with color, comfort, fabrication, etc. The ease-of-care of these materials became the major selling point in gaining trade and consumer acceptance in worthwhile volume.

The intrinsic wash-and-wear properties of these fibers and of those yet to come, and the force of the promotional effort by their sponsors, can be counted on as major factors in developing the whole wash-and-wear concept. One may doubt, however, that the economics of the more resilient man-made fibers favor a major conversion of consumer buying preferences to the extent that such fibers will dominate the apparel market.

The blends, of course, allow an economic compromise, and provide greater latitude for attaining acceptable balances between the wash-and-wear performance virtues of the synthetics and the comfort and more familiar virtues of the traditional fibers. Though there remain some technical and aesthetic problems requiring further improvement, and blends as a group have yet to "live down" some of the early errors in their design and promotion, this category of wash-and-wear fabrics will increase in importance.

It should be noted in comparison with the fourth group yet to be discussed that the development, control, and general promotion of both blends or wholly synthetic fiber fabrics are to a considerable extent in the hands of large and aggressive organizations with both means and great incentive to make a permanent success of their programs. Wash-and-wear is a primary attribute on which the case of the synthetics in apparel fabrics largely rests, and not merely an "extra" or improvement on something that already was acceptably good in all-round value and utility. This is pointed out as preface to the conjecture that, whatever the relative actual merits of the synthetic fiber fabrics may be in comparison with the "treated" fabrics of the fourth group, there will be a factor in the favor of the synthetic fibers due to the concentration and weight of their promotional support.

There is an additional factor which must not be overlooked in attempting to predict the future of wash-and-wear, namely, that the next major breakthrough in fiber polymer development may well be in attaining balances of characteristics within single fibers that are now attainable only by blending of various fibers. This, of course, has been the dream for many years, to attain strong and highly resilient fibers with a more pleasing absorbency and "skin-kindly" natural feel.

It is a difficult technical problem in which seemingly incompatible requirements must be resolved, but the rapidly increasing skills of the polymer chemists can be counted on for significant successes in the not too distant future. The advent of such compromise fibers will have great importance in the field of wash-and-wear apparel fabrics, and will alter greatly the relative positions of the synthetic and the natural fibers.

The fourth group, the "treated" cellulosics, is currently arousing the greatest general interest. It has progressed rapidly from status as a promotional novelty to what more enthusiastic advocates have hailed as the salvation of the cotton economy and of a large segment of the textile industry. It is certain that wash-and-wear cottons and rayons are here to stay, and to grow. It is not quite so certain, however, that they will continue to prosper in the way that is commonly hoped for. It is the main purpose of this discussion to review some of the factors which have controlled and will control the "prosperity" to be realized from wash-and-wear fabrics in this group.

How Wash-and-Wear Just Growed. It is pertinent to look back a moment to the origins and prior history leading to wash-and-wear (WW) cellulosics. Though there has been tremendous total effort in technical development, it cannot be said that this has always been well-programmed toward clearly conceived objectives. We note that the beginnings of crease-resistant finishes (CRF) and WW were in attempts to toughen and improve the wet strength of the otherwise highly moisture-sensitive regenerated cellulosics, then later in efforts to attain satisfactory dimensional stability.

At a stage of development where important improvements along these two lines were far from achieved in a commercial sense, the "side effects" of greater resilience or muss-resistance were noted. The first major use of chemical treatments of these CRF and WW types was based on enhancement of muss-resistance under the conditions of wearing, but in application to fabrics which were not fully washable by customary procedures.

Then came the big move in adaptation of these treatments to cotton, and in limited extent to linen, where washability was inherent and dimensional stability more easily attained. Though the pioneers in these developments foresaw the potential of crease resistant treatments in reducing

ironing time and labor, major emphasis was placed on appearance of these treated goods during a day or several days of sequential wearing and on appearance following packing. The ease of ironing (following washing) came fairly well down the list of the claimed virtues of these materials.

There was considerable trade resistance to the necessary higher prices for these goods, also doubt that "hidden" performance values not apparent to the hand and eye were salable attributes at the retail level. The details of how this trade resistance was overcome are another story in itself, but it is important to note that it was a grass-roots campaign aimed at the consumer, rather than a frontal attack through normal trade channels, which was necessary to bring about an awareness of and resulting demand for these CRF materials.

It is pertinent also to note that the apparel trade itself was far more excited over glazed finishes and durable embossing, parallel developments of the same general technology as CRF and WW, which had obvious eye appeal. These two developments had their big seasons of profitable popularity before anything like comparable interest was diverted to the far more basic and significant CRF and WW programs.

Merchandising—Who's Got the WW? As erratic and spotty as the technical history of WW has been, it appears by contrast to the merchandising of these treated goods to have been an orderly and well coordinated campaign. The diversity of participating interests was, and is, a complicating factor which greatly reduces the efficacy of the total effort. It is still far from certain in many minds whether WW is the proper game primarily for the chemical companies, the finishers, the converters, or the merchants.

The fact is that industries devoted to the production of cellulosic goods and of the chemical auxiliaries for such goods were "pushed" into the wash-and-wear claims and programs in defensive action against the promotional campaigns of the synthetic fiber interests. Neither the technical development nor the merchandising strategy were sufficiently far advanced to fully justify the big jump from CRF to WW, but it was an urgent matter to cover the position before serious inroads were made by the new synthetic fiber competition.

It is interesting to note that in spite of the rather frantic technical efforts to get these "treated" goods over the hump from reasonable CRF to true wash-and-wear performance levels, few if any of the WW-ticketed cottons in the market today are better in wash-and-wear performance than some goods which were available three and four years earlier under more conservative CRF ticketing and promotional claims.

What was new was the boldness of the wash-and-wear concept. This brought not only new challenges for the technologists, but attendant problems in what to call it, how to measure it on a rational scale of values, how to measure it in terms of consumer values, and how to get the story across to the public in a manner which would benefit the supplying industries. As short as the other problems may be of fully satisfactory solutions, the latter problem is the most inadequately solved at the present time.

A hard appraisal will show that to date the supplying industries (fabric manufacturers, finishers, finished fabric merchants) have not succeeded in achieving either of the benefits that were potential to the wash-wear concept and development. *There has been no consolidation of up-graded pricing commensurate with the up-graded goods, and there has been no increase in volume demand for goods in general.*

Wash-and-Wear—No Unmixed Blessing. Briefly examining the first of these failures, we see that though the pioneers and most active promoters of CRF and WW goods did enjoy temporary advantage in pricing, this advantage was quickly lost as similar offerings increased. Where formerly the buyer and consumer had a clear choice between a few premium CRF and WW lines and a great quantity of untreated lines, choice later became that between

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a confusing array of treated goods. Being aware that there was a wide range of performance values among the various offerings, and having no yardstick by which such relative values could be readily and reliably measured, both trade and consumer buyers lost their willingness to pay a premium for any of them. The effect, as evidenced by current pricing and earnings statements, has been only to further tighten the squeeze on grey and on other finishing costs. Instead of being a salvation, CRF and WW have actually made it just that much more difficult to come out whole in the production and sale of goods.

The second failure, not yet so readily apparent but observable if one analyzes buying habits, is that WW had tended to reduce the volume consumption of all goods. This has resulted partly from errors of commission as well as of omission.

The unfortunate fact is that WW claims and promotional copy have rather broadly suggested that one WW dress or shirt will suffice where formerly a minimum of two or three was necessary for practical rotation through normal cycles of wearing, washing, and

ironing. To that small but growing percentage of the populace who have accepted the significance of wash-and-wear in their own living patterns, the implications are that less of the family budget need go for clothing and that the savings can be diverted to payments on fancier cars, higher hi-fi's, and other attractive hardware of modern living.

We have yet to see any WW promotional copy which even remotely suggests that the savings in apparel maintenance costs made possible by wash-and-wear can be applied to the purchase of higher price quality garments in even greater numbers, thus adding to the pleasures of wardrobe luxury, variety interest, and prestige. It is a reasonable prediction, however, that unless the industry-wide promotion of wash-and-wear is reoriented, coordinated, and aggressively pursued along these lines, WW may yet fill more cotton-loan warehouses and close more mills and finishing plants than anything yet schemed as "aid-through-trade."

If wash-and-wear is to prove of any permanent benefit to the textile industry, it must be sold on a theme that will arouse consumer eagerness for a more extensive array of apparel items of qualities and prices which favor the American textile economy. (The same can be said concerning WW domestics, such as bed sheets). This calls for a well-conceived grand strategy, and for aggressive tactics all along the line.

Detroit Has a Lesson for Wash-and-Wear. Though it is difficult to find a closely parallel case in other product fields, some value may be found in analyzing a roughly analogous situation, as for instance that of automatic transmissions and power accessories on autos. Like wash-and-wear, these are additive features designed to materially reduce the labor otherwise involved in the use of the basic commodity. Both of necessity mean an appreciable increase in cost, and both are options in the sense that otherwise comparable products are still available without these added features.

It is necessary to point out only a few major merchandising factors, and the obvious results, to gain the lesson from the comparison. With the automatic and power accessories for autos:

1. Before offering to the public, the features were developed to the point where they would do the job that was promised, and were rigorously evaluated.

2. Features were designed to do their jobs continuously throughout the normal service life of the basic product, with no need to resort to hand-shifting and unassisted steering and braking after the first period of use.

3. The public was teased into eager anticipation by advance publicity long before the features were made available.

4. The same degree of capability and quality was standardized for all models and price categories of the basic commodity. "Easy-to-drive" meant the same type and degree of performance and added value in the standard minimum price cars as in the most luxurious land yacht.

5. Promotion of these added features was kept in balance with that of other features, and done entirely by the supplier of the completed assembly. There was no let-up of the selling of other attractions through which favor with the public was sought.

6. The public was not confused by an array of supplementary brand names for separate components.

7. The promotional story was taken directly to the buying public, and it was not left to the dealers to persuade the consumers to pay the premium for the "easy-to-drive" features.

The results are well known. The women of the land took their place behind the wheel, ran up the mileage on the family car, and demanded cars of their own. Hesitancy as to the longer, heavier, more unwieldy cars, required in the "planned obsolescence" program, was overcome. The public adopted a "shoot-the-works" attitude and bought all the profitable decorative accessories to go along with the greater investment in the technical improvements.

This "planned" management of product innovations is the normal strategy of all major consumer industries, excepting textiles. Wash-and-wear might have been managed similarly. It may be a long time again before another textile development of equivalent potential comes along to provide opportunity for textiles to get on top of the situation and master the techniques of "managing" the consumer market.

Textiles Can Get Bigger Cut of Apparel Pie. It must be emphasized again that even within the limits of what the public is currently willing to spend on apparel there is opportunity for textiles to take a bigger share. With all due respect to the laundries and dry cleaners which have traditionally been considered the best friends the textile industry ever had, one must recognize that their share of what is in total spent in ownership and maintenance of apparel is a large one.

In the extreme but common case of the business shirt sent out for laundering, the maintenance cost is three to four times the original purchase cost (and some ten times the cost of the fabric in the shirt). For a nonwashable dress, maintenance expense may run fifty per cent of initial garment cost (and up to twice the fabric cost). As has been noted, to the extent that wash-and-wear reduces these post-purchase expenses, there are dollars freed for purchase of more and better quality apparel products if the industry can lure and persuade the public to take that course.

But the two campaigns must be simultaneous and well-coordinated. Yet we see a great hesitancy to come right out and put the economic facts before the public, presumably from fear of arousing the enmity of the maintenance industries. In fact, we see the rather odd approach of seeking the endorsement of the laundry industry on products sold with claims implying that they do need to go to the laundry.

There should be no concern as to the welfare of the apparel maintenance industries. Wash-and-wear may be the spur to their devising automated systems by which a shirt can be returned, cleaned and pressed, for 12 cents instead of 24, or a dress back for 50 cents in-

(Continued on page 114)

Wet Soiling of Resin-Treated Fabrics

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ONE OF THE most important textile finishing developments in recent years has been the introduction of wash-and-wear and ease-of-care cotton fabrics. This practical development did not result from newly discovered basic concepts in cotton finishing, but rather from the refinements of techniques and products already known or in existence.

For over thirty years now, fabrics made of cotton, rayon, and linen have been treated with a variety of thermosetting resins or crosslinking agents to produce dimensional stability, wrinkle resistance, and resilient hand, and to make them feel more like wool. Besides these primary improvements, it was recognized very early that such modified cellulosic fabrics also had reduced swelling in water, lower moisture regain, higher wet wrinkling resistance, and a faster rate of drying after washing. It was also generally known for a long time that such resin-treated cellulosic fabrics were easier to iron after washing. However, no particular promotional emphasis was placed on these latter properties.

With the increasing promotion and utilization of selected man-made fibers in garments that were labeled as requiring little or no ironing after washing, many segments of the cotton finishing industry began to examine more closely the properties of resin treated cottons during the washing and ironing operations. Here it was found that while all cotton creaseproofing finishes yielded fabrics that dried faster, ironed more easily, or actually did not require ironing, there existed no simple direct relation between creaseproofing properties and the so-called wash-and-wear properties.

Moreover, it was found that with any basic creaseproofing resin, the wash-and-wear properties could be varied over a wide range of performance by the use of additives or modifying agents. These agents either rectified objectionable properties produced by the basic finishing resin and crosslinking agent, or they yielded synergistic desirable effects when used therewith. In addition to enhancing the wash-and-wear properties, these modifying additives also were found to be very desirable for improving such mechanical properties as tear strength, abrasion resistance, flexing resistance, and sewability.

ADDITIVES IN RESIN FINISHES

The most important classes of creaseproofing and stabilizing agents which are used on cotton and rayon fabrics to produce wash-and-wear finishes include the following:

a) Water-soluble epoxy resins
b) Epoxy resin blends with ethylene urea resins
c) Ethylene urea-formaldehyde condensates
d) Methylol and methylated methylol melamines
e) Triazone-formaldehyde condensates
f) Formals of polyols
g) Methylated polymethylol ureas
h) Urea - formaldehyde condensates

Besides these major classes of products, there are several other compounds which are used in limited applications. These include:

i) Acrolein-formaldehyde resins
j) Glycol uril-formaldehyde resins
k) Dialdehydes and their acetals
l) Methylolated diamides

Of these products, those in the A-F classes have become the more important for use in washable cotton fabrics since they are either completely non-chlorine retentive or are at least chlorine damage resistant in mild or limited bleaching operations.

In the use of any of these basic creaseproofing and stabilizing agents, quite a large number of additives or modifying products are employed to produce specific improvements in the fabric properties. These additives include a host of hand modifiers, plasticizers, softeners, water repellents, and bodying agents. The more frequently encountered products here comprise such chemicals as:

Acrylic ester polymers and copolymers
Oxidized low molecular weight polyethylenes
Methyl hydrogen silicone water repellents
Modified silicone softeners
Stearamide - melamine resin water repellents

TABLE I. Typical Desirable Effects of Additives in a Wash-and-Wear Finish on 80x80 Cotton Fabric

Treatment Applied	Crease Recovery Angle—Degrees		Elmendorf Tear Strength—Grams		Stoll Flex Abrasion—
	W	F	W	F	Cycles—W
None	65	73	750	430	880
EU Resin Alone	121	134	500	260	410
EU Resin + Polyethylene E	132	139	740	430	790
EU Resin + Silicone WR	137	142	740	420	810
EU Resin + Cationic S	131	139	670	380	760
EU Resin + Acrylic E	130	138	710	410	620
EU Resin + Silicone NS	135	140	730	410	880
EU Resin + Stearamide Q	132	137	780	410	810
EU Resin + Glyceryl Stearate	127	133	690	390	620

Stearamide-urea resin water repellents

Stearamide-methylol dispersions

Stearamide-pyridine quaternaries

Stearate esters of polyols

Polyvinyl acetate

Polyvinyl alcohol

Hydroxyethyl cellulose

Hydroxyethyl starch

Fatty acid-amine condensate cationic softeners

Styrene-butadiene copolymers

Miscellaneous elastomeric latices

One of the most important reasons for the use of many of these additives or modifying agents on cotton wash-and-wear fabrics is to obtain better mechanical properties. This is illustrated by the data in *Table I*. Here the desirable effects of a basic crease-proofing and stabilizing ethylene urea-formaldehyde condensate on the properties of a white 80x80 cotton fabric are compared to those produced by the same condensate in the presence of various additives.

The treating bath here consisted of 12% of a 50% ethylene urea-formaldehyde resin, 1.5% of a recommended acidic catalyst, and 2% of several commercially available additives. These additives include a nonionic polyethylene emulsion, a silicone water repellent emulsion, a fatty acid-polyamine condensate type cationic softener, a polyethyl acrylate emulsion polymer, a non-water repellent, modified non-soiling silicone softener, a stearamide-based quaternary durable water repellent, and a glyceryl-stearate-based softener.

The tests reported in *Table I* were made on the initial samples after normal drying and curing. These clearly indicate the desirability and need for the use of the various additives. With all of such additives, not only is the crease-proofing performance of the resin enhanced, but also the fabric's resistance to tearing and flexing is greatly improved.

There are literally hundreds of such type additives which are available to the textile finisher for compounding with basic crease-proofing resins. While varying widely in chemical composition, most of the additives found useful in wash-and-wear finishes have the one common property of acting as plasticizers for the resins and/or lubricants for the fibers.

On the other hand, these products vary widely in degree of softness or type of hand produced on fabrics, in resistance to laundering, in heat and light resistance, in effects on chlorine resistance, in yellowing of whites during curing or upon aging, and in resistance to both wet and dry soiling. The quality of many resin treated wash-and-wear cotton and rayon fabrics on the market very often depends not as much on basic resin type used as on the skill of the finisher in utilizing one or several additives for specific effects.

THE PROBLEM OF WET SOILING

With the greater utilization of resins and additives on cotton fabrics and with the further multiple blending of chemical products to produce best over-all properties in wash-and-wear garments, observations have been made from consumer complaints that some cellulosic wash-and-wear fabrics become soiled during washing. These complaints have not been isolated cases where extenuating circumstances or abnormal practices could account for selective wet soiling, but rather have come as periodic avalanches from wash-and-wear fabric users. Moreover, such complaints have increased with the increasing availability of white and pastel dyed or printed cotton and rayon wash-and-wear fabrics.

When it has occurred, the problem seems to consist of the following: A resin-treated wash-and-wear garment is washed in a normal way along with other soiled garments. After washing, it is noted that the garment in question is more soiled than it was before washing. It appears that the soil which was removed from the other garments and dispersed during washing has been redeposited on the resin treated garment.

On repeated washing of the treated garment along with other normally soiled clothes, there is a further soil redeposition which occurs on the one item and this specific item becomes progressively more and more soiled. In extreme cases, it becomes impossible to bleach or scour the soiled fabric to restore it to a clean, white condition. Besides this continued soiling on repeated washings, under the same localized conditions, often a progressively strong rancid-like odor develops on that garment which is susceptible to wet soiling on washing.

Since this problem was first noted, there have been various investigations made to discover the

cause. Blame was quickly put on some of the additives discussed above which were being used in the resin finishing operation. Water repellent additives, and especially silicones, were found to contribute to wet soiling. Some elastomeric latices also were guilty. Combinations of silicones with tacky elastomers were found to be exceptionally bad.

Unfortunately, too many generalities have already been made by the trade in blaming all members of a particular class of products for wet soiling properties, while the blame was rightly due to only certain members of such a class or to the selected conditions of washing the soiled garments. Silicones and acrylic resin emulsions have been especially blamed for all the ills of wet soiling, while the effects were common to only selected polymers in these classes and to the way they had been utilized in the finishing plants. A particularly notable contradiction to these generalities is a newly introduced silicone product which is unusually resistant to wet soiling.

In order to obtain more information about the soiling of resin treated fabrics during laundering, extensive investigations have been started in many laboratories to understand the problem better and to develop solutions, when needed. In our laboratory, we have observed that the problem is more complex than defined by some early investigators and that much work is needed in the way of both laboratory and practical test procedures to study it critically. Of primary importance is the elucidation of the significance of certain laboratory test methods in relation to practical conditions where wet soiling occurs. So far, the following observations have been made:

A. *Practical Washing Effects*

1) Regardless of finishing agents present on a wash-and-wear cotton fabric, little or no wet soiling takes place when the laundering is with built synthetic detergents.

2) With finishing agents having wet soiling properties, the greatest amount of wet soiling is produced by mild neutral soaps and high water hardness. In this case, repeated laundering under the same conditions produces further soil build-up on the soil sensitive fabrics and a rancid-like odor.

3) Intermediate wet soiling on the same sensitive fabrics occurs when laundered with soap and washing soda or soap and water softeners.

B. *Laboratory Washing Effects*

1) The degree of wet soiling produced on resin treated fabrics containing a wide variety of additives or modifying agents varies extensively with the type of artificial soil, washing compound, temperature, and procedures used.

2) By altering the nature of the artificial soil from dry to very oily, complete reversals of soiling effects are found with some finishing chemicals.

3) The greatest problem in wet soiling of resin treated fabrics comes from oily soils present during the laundering operation.

C. *Influence of Finishing Chemicals*

1) In general, cotton fabrics treated with thermosetting creaseproofing resins or crosslinking agents alone are somewhat more wet-soil resistant under any given laundering procedure than is untreated cotton fabric.

2) Hydroxylated polymer additives such as polyvinyl alcohol, starch ethers, hydroxyethyl cellulose, and the like, when used with the basic creaseproofing resins, do not produce any detrimental wet soiling properties.

3) Durable water repellent additives to resin finishes generally tend to produce wet soiling with oily soils under extreme laundering conditions (such as number A-2 above). This effect, however, varies widely with the chemical nature of the water repellent product. Some products in this class, such as cured silicone water repellents, produce wet soiling of fabrics under the mildest conditions. On the other hand, the wet soiling influence of some stearamide-based water repellents can only be seen in extreme cases of oily soil concentrations and poor laundering conditions. Yet even here the nature of the stearamide derivative greatly influences its effect on wet soiling.

4) Thermoplastic polymers such as polyethylene, selected elastomers, and selected acrylic resins all have varying effect on wet soiling. In general, they are more sensitive to oily soils than to dry or aqueous soil dispersions. The very tacky homopolymers of the lower acrylic esters are the worst offenders. However, copolymers and ter-polymers of these same acrylic esters have improved wet soiling resistance, especially if they contain thermosetting or potentially resin reactive groups.

5) The use of catalyzed silicone water repellents together with tacky elastomers and low melting thermoplastics further accentuates wet soiling with both dry and oily soils. Omission of the silicone catalyst only slightly reduces the wet soil problem.

6) Selected silicone polymers used as durable softeners and plasticizers are completely resistant to wet soiling under any washing conditions. Also in this class are such products as the fatty acid esters of polyols, various cationic softeners, and emulsified vegetable and mineral oils. The latter products, however, obtain their wet soil resistance from their lack of durability to multiple washings, i.e., they are no longer present on the fabric after repeated launderings.

7) In examining some of the basic creaseproofing resins alone on cotton fabric and under extreme laundering conditions for oily soils (mild soap and high water hardness), the urea-formaldehyde, ethylene urea-formaldehyde, and methylated polymethylol ureas produce less wet soiling than the untreated cotton. Methylated melamine-formaldehyde resins, triazone-formaldehyde resins and two epoxy resins produce slightly more wet soiling than the untreated fabrics. Under all other washing conditions, however, all these resins appear to have equally good wet soiling resistance.

8) No clear cut relationship has been found between melting point of the additives used in wash-and-wear finishes and their wet soil retention on laundering. At first it was assumed that only low melting products retained soil because of the softening of the product during hot laundering operation.

TABLE II. Apparent Resistance to Wet Soiling of Resin Finished Cotton Fabrics by Four Different Washing Procedures

Treated Fabric Used	Degree of Soiling Observed			
	Test 1	Test 2	Test 3	Test 4
Untreated Cotton	None	None	None	Medium
Resin Alone	None	None	None	Medium
Resin + Silicone NS	None	None	None	Medium
Resin + Polyethylene E	None	Medium	Medium	High
Resin + Stearamide A	None	High	None	High
Resin + Acrylic H	None	High	Medium	High
Resin + Silicone WR	None	High	High	High
Resin + Cationic S	None	None	None	High
Resin + PVA	None	None	None	Medium

This is not borne out by the facts. For example, crude methylene bistearamide, with a melting point of 125-130 C, produces very severe wet soiling as compared to a methylol stearamide with a melting point of 95 C. Also, a cured silicone resin with an infinitely high melting point, due to cross-linking, is the worst offender in wet soiling, while a lower melting silicone polymer is excellent in all wet soiling tests.

This lack of correlation can also be seen in the case of thermoplastic products such as polyethylene, with a melting point over 100 C, compared to homopolymers of ethyl and butyl acrylates which are soft and tacky at very low temperatures. Yet both of these produce very severe wet soiling in selected tests, but very little soiling by other tests.

9) There is again no absolute correlation between degree of water repellency produced by various additives and their susceptibility to wet soiling. This is borne out with the stearamide-based water repellents. These give equivalent water repellency in wash-and-wear finishes, but the soil retention on laundering varies from mild to very severe under certain laundering conditions. Again this is shown in an uncatalyzed silicone water repellent which is still very soil retentive, even though it produces little or no water repellency on the fabric when not cured.

From these present observations, where the results are far from clear cut and definitive, it appears that there may be no simple mechanism which can explain the wet soiling found with some wash-and-wear resin-treated fabrics. Moreover, there is as yet no simple theory which would allow the prediction of whether a new finishing agent will be poor or excellent for wet soiling resistance in laundering or with individual types of soils. There are indications that the adsorption and retention of soils by finishing agents on fabrics during a laundering operation is highly specific. Under selected washing conditions, the following are a few of the mechanisms which appear to be involved:

1) Precipitation and adsorption of soil due to deactivation of the detergency properties of the surface active agent, as in the case of mild soap and high water hardness.

2) Adsorption of suspended or emulsified soil through ion exchange or mordant effect as in the case where a cationic finish or heavy metal salts on the fibers react with the anionic suspension of the soil.

3) Specific solubility of the soil into the finishing agent on the fiber, e.g., oily soil and an oleophylic finishing agent.

4) Specific adhesion of the soil for the finishing agent on the fiber due to similar polarity, hydrogen bonding, and even electrostatic effects.

5) Mechanical entrapment of soil by the finishing agent on the fiber, as with tacky polymers.

With some finishing agents that apparently cause wet soiling under a wide range of laundering conditions and types of soils, there must be several of these, and even other, mechanisms involved to account for such great attraction for suspended soils.

EVALUATION OF WET SOILING

Perhaps the greatest problem in understanding the reason why certain chemical finishing agents alter the wet soiling resistance of cellulosic fabrics is that of the lack of proper meaningful evaluation and test methods. An example of the confusion that can arise is shown in *Table II*, where a number of cotton fabrics, treated with the same basic creaseproofing resin and catalyst but with different additives and modifying agents, were tested for resistance to wet soiling by a number of different methods.

By Test No. 1, which involved machine washing with one compounded synthetic soil medium and using a built synthetic detergent, no wet soiling was found on any of the laundered samples.

By Test No. 4, which involved mild washing with soap and a large amount of carbon black, all samples show considerable wet soiling, including an untreated fabric.

By Test No. 2, employing soap and machine washing and one type of synthetic soil, various degrees of soiling were found due to the different finishing agents on the fabrics.

By Test No. 3 using the same conditions as in Test No. 2 but altering the composition of the soiling agent, different effects are again noted, with some reversals in wet soiling propensities.

By what test, then, do we decide that a particular finishing agent will contribute to wet soiling in practice?

From these and other tests examined, certain finishing additives never produce any soiling in laundering under a variety of test conditions, while a few others al-

TABLE III. Wet Soil Ratings on Different Finishes for Cotton Fabrics

Resin Type Used	Modifying Agent Added								
	None	Amide Q	Amide R	Sil.NS	Sil.WR	PE	Cat.S	Acr.I	Acr.II
None	0	2	1	0	3	1	0	2	1
DMEU	0	3	1	0	3	1+	0	1+	1+
MMF	0	3	2	0	3	1+	1—	2	1
MUF	0	3	1	0	2	1	1—	1	1
Triazone	0	3	1	0	1	1+	1—	1+	1+
Epoxy	1	3	1+	0	3	1+	1+	2	1

Key: 0—No wet soiling of any kind visible. 1—Slight streaks, spots, or graying appearance. 2—Deep staining. 3—Extreme soiling and rancidity.

ways produce wet soiling. Here the problem of evaluation is simple. The more complicated problem is with the large number of additives which seem to give varying results by different test procedures. Many of such additives are very desirable for use in wash-and-wear finishes because of the improved properties that they impart to the resin finished fabrics. With such chemical products, it is difficult to draw definitive conclusions about the relationship between chemical properties and wet soiling, since the latter occurs only under specific conditions of testing.

Because of the ease with which a standard test soil can be compounded from carbon black and because the uniform soiling produced can be evaluated by reflectance measurements, much emphasis is being placed on devising test methods similar to those which have been formulated for detergency evaluation. We have found such methods do not correlate nor reproduce what actually happens in practice, where the wet soiling which occurs is not uniform, is not a black soil, is of a variety of hues depending upon the nature of soils present, and is generally of a greasy, oily character which is rancid in odor.

A simple method we have utilized for examining wet soiling properties of resin finished fabrics is the following:

Laundering:

a) Five repeated washes in an automatic home type washer using the normal settings for cottons—140 F.

b) Drying the fabrics after washing.

c) In each wash, adding a new supply of washing compound and a new soiled test fabric as a source of soil.

d) Using, at will, mild soap alone, mild soap and soda ash, mild soap and water softener, or a synthetic detergent.

Soil Source:

Prepare a soil test piece by applying to two yards of untreated white 80 x 80 print cloth each of the following materials on different areas of the fabric:

Tomato ketchup
Mustard
Grape jelly
Black coffee
Chocolate syrup
Dry floor soil
Vegetable cooking oil
No. 20 motor oil
High-pressure grease

One half teaspoon of each material is poured or spread with a spatula on an area of the cloth. The cloth is then dried for 15 minutes at 250 F. This synthetically soiled cloth is placed in the wash load, along with the resin-treated fabrics being evaluated, and serves as the source of soils which may redeposit on the test specimens.

Observations:

Since the wet soiling, when produced in this wash procedure, is not of uniform intensity over the whole specimen and since it may be streaky, yellow, rancid, or of different hues, it is not possible to use reflectance measurements to depict all that has happened. The best approach is to photograph the samples, describe their appearance, or assign them arbitrary soil ratings.

With the latter, we have assigned a rating of "O" when no wet soiling of any kind was visible; a rating of "1" when slight streaks, spots, or graying appearance was noted; a rating of "2" when deep staining was found; and a rating of "3" when extreme soiling and rancidity was present. In the case of doubtful ratings, examination of the test specimens under ultraviolet light will reveal the presence or absence of oily soils not otherwise visible in normal light.

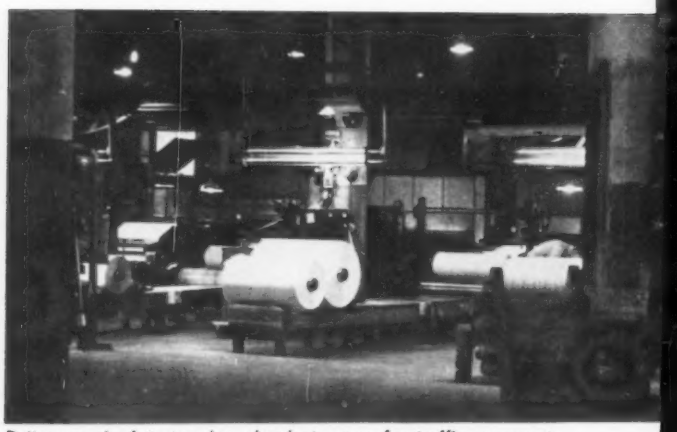
Some typical results which have been obtained by using this test procedure in one wash test employing mild soap are shown in *Table III*. Here swatches of white 80 x 80 cotton print cloth are treated with different resins and additives and all laundered together. It is shown by this test that the basic creaseproofing resins by themselves do not contribute to wet soiling and that the additives used may influence this property to varying degrees.

With these same samples of fabrics and the same soiled test cloth, the degree of soiling can be further accentuated or be minimized by increasing the water hardness in one case or by adding water softeners in another. But the relative effect of the different additives on wet soiling remains the same.

Using such a laboratory test procedure, it has been possible to find major differences among similar

(Continued on page 114)

Operator prepares a resin mix under high-speed agitation in one of the mixing tanks, which are located in seperate area next to finishing department. Prepared resin liquors are pumped to the padder.



Delivery end of tenters has abundant space for traffic movement without congestion and for expansion of tentering operations. Each tenter batcher is equipped with a cooling can and cloth cutter for

Efficient Plant Layout

Staff prepared Exclusive

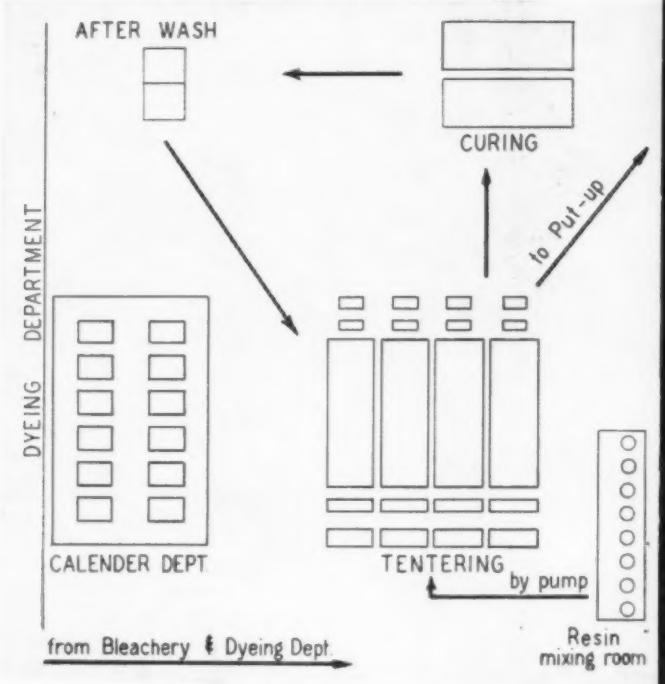
MODERN resin finishing with its emphasis on high productivity demands soundly planned preparatory and finishing operations and an effective layout of modern equipment and auxiliary facilities. Together with ample space for diversification or expansion, they enable a plant to readily adapt itself to technological advances and market changes.

In brief, this describes the Millville Manufacturing Co., Millville, N. J., diversified finishers of a broad range of cotton fabrics and blends in the wash-and-wear and crease-resistant classifications.

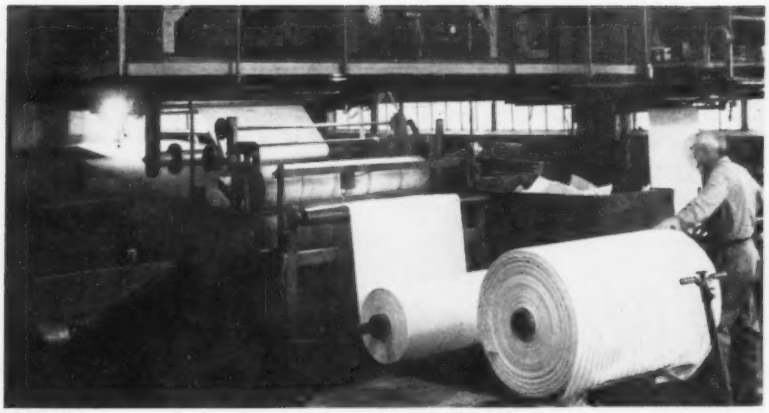
Although Millville's plant is multistoried, there are none of the disadvantages usually associated

Each of Millville's four high-speed tenters is equipped with an enclosed stack of drying cans (arrows), a compensator, and cloth straightener. Drying temperature is controlled at a maximum of 270 F. Resin feed tanks are located away from padders for greater freedom of movement and ease of machinery inspection and repair.

Abundance of space characterizes Millville's one-floor layout of its resin finishing equipment. Since Millville finishes a broad range of fabrics, with calendering a specialty, continuous finishing by combining operations would not result in significant economies. Arrows show routing for wash-and-wear and crease-resistant finishes.



continuous batching. Each department has space for diversification and expansion to adapt to changing markets and technology.



Millville's two gas-fired curing units are equipped with cloth scrays for continuous operation. In general, most fabrics are cured for short periods of time—1 to 2 minutes—at 360 to 370 F. Goods are plaited into trucks for better cloth inspection and easier movement.

for Resin Finishing

with such a building. For one thing, there is an abundance of space, and operations have been grouped to facilitate flow of goods between departments. Bleaching, mercerizing, dyeing, and finishing operations are located on the first floor, while put-up and shipping operations are located on the floor above.

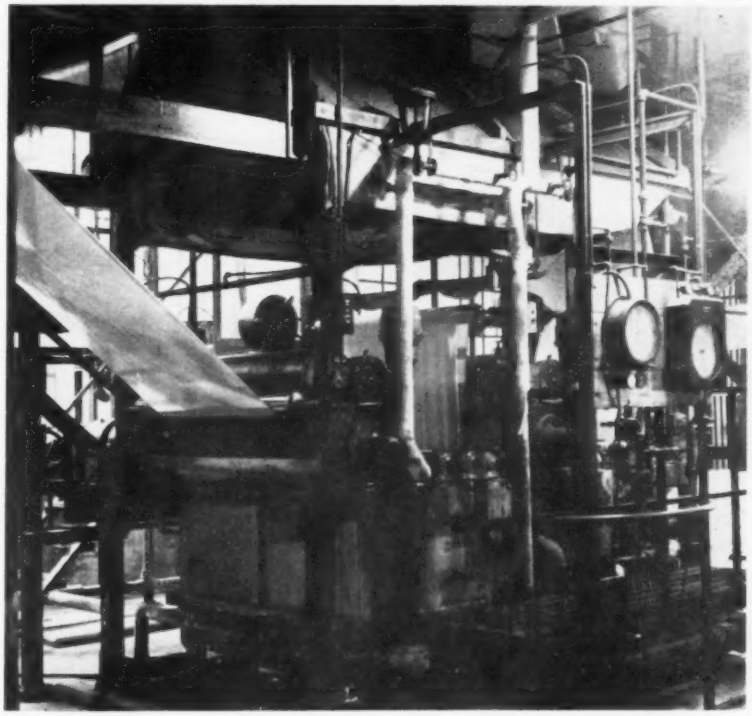
In laying out its finishing department for resin finishing, Millville's management recognized that some advantages would be forthcoming from a combination of certain operations, such as tentering and curing. But since a broad range of fabrics are processed in smaller production lots, including calendered fabrics, such combination offered no economies to speak of. However, ample space is available, particularly in the vicinity of tentering and curing, for relocation of equipment if found practicable, or for that matter for installation of new equipment required by technological advances in resin finishing.

While processing at Millville follows conventional finishing routes, a listing of the operations for the more popular fabrics, such as 80 x 80, 4.00 constructions is worthwhile, since it also indicates the trend toward continuous processing in preparatory stages. These feature tensionless rope-washing equipment in bleaching operations, modern padding equipment and controls for wet mercerization, and high-speed can drying equipment:

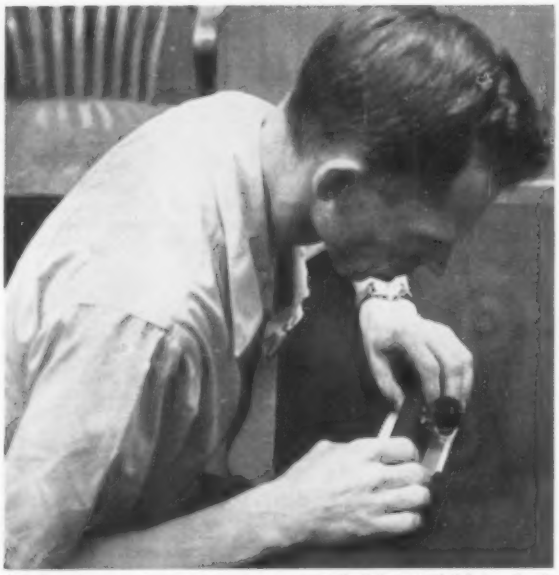
1. Singe and desize
2. Sour and wash
3. Mercerize
4. Bleach continuously and dry
5. Dye (rinse until fabric is chemically clean)
6. Resin impregnate and dry-frame
7. Emboss or schreiner
8. Cure
9. After-wash
10. Tenter frame

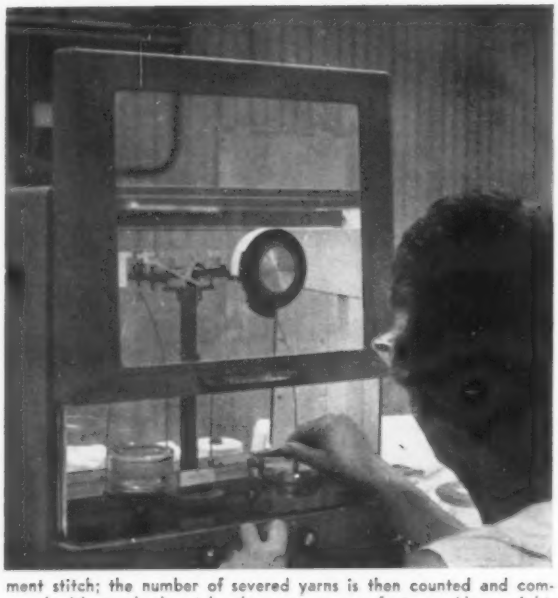
The accompanying photographs and drawing of Millville's finishing department reveal the advantages of its machinery and equipment layout: ease of machinery inspection and repairs, movement of materials and goods without congestion, and ease of fabric inspection as an aid to quality control.

After-washing of the resin-treated fabric consists of several dips in alkaline solution at 160 F, followed by hot rinsing. Goods are then returned to the tenters for final framing.



How Bradford Controls





Wash-and-wear garments require a properly lubricated fabric of adequate strength to withstand sewing. One of the important tests carried out by Bradford technological chemist George Richardson (above, left) is resistance to needle cutting. A strip of fabric of prescribed length is doubled and sewed with a conventional garment stitch; the number of severed yarns is then counted and compared with standards set by the garment manufacturer. Above, right: One of the more important in-process controls is a quantitative determination of the amount of resin impregnated into the fabric. Regular checks of squeezes and other conditions assure uniformity.

Staff prepared Exclusive

THE CONCEPT of wash-and-wear created a need for fabric properties that were not visualized in the early years of resin finishing. Moreover, the varied requirements of this new fabric concept made it essential that all properties exist in more precisely controlled relationships.

To the cotton finisher, wash-and-wear emphasized the importance of properties not inherent in the cotton fiber. Though these can be attained by proper selection of resins and chemical materials, practical resin formulation, as every technologist knows, presents many problems. To begin with, the achievement of a new property is accompanied by some modification of one or more fiber properties. For example, achievement of the all-important crease resistance causes losses in tensile and tear strength, and also reduces fabric absorbency, a property that must be carefully controlled in certain fabrics, such as shirtings, for comfort in wearing.

Still another restriction may present itself in resin formulation. Not all fabrics, for one reason or another, readily lend themselves to resin treatment. These require more exacting formulation, and quite often special considerations in plant processing as well.

Recognizing the increasing technical nature of resin finishing and the demands of true wash-and-wear, the Bradford Dyeing Association, Bradford, R. I., set up a quality control program that now extends into every phase of plant processing. Although centralized in the laboratory, its activities are closely coordinated with plant production, and the entire program is a direct function of plant management. Perhaps a most important objective of the program is to indicate potentially troublesome areas in processing by periodic inspection of machinery and equipment, frequent reappraisal of processing techniques, and extensive fabric testing.

Bradford's entry into the resin finishing field goes back many years, for the company, established in 1911 as an American subsidiary of Bradford Dyers Association, Ltd., has always carried on broad research and diversification programs. As new developments were evolved, they were quickly adopted.

It was in line with Bradford's policies, therefore, that its experience in resin finishing should begin with the first application of resins to rayon. Thus, by the time improved resins were developed for cotton, Bradford already possessed a practical background in this exacting finishing operation. And when nylon subsequently pointed to the concept of wash-and-wear, Bradford's experience in resin formulation, together with established finishing techniques, enabled a rapid entry into this new market.

Coincidental with the development of its wash-and-wear finishes, in which Bradford's research group worked closely with grey mills and resin manufacturers,

Wash-and-Wear

In Bradford's testing program, breaking strength determinations (above, right) are carried out on the grey, prepared, and finished fabric. Should testing indicate that a grey fabric cannot meet ultimate standards of wash-and-wear, it is recommended for another category of resin finishes. Together with tear strength and crease recovery determinations (above, left), breaking strength tests present an accurate picture of a fabric's processing history, pointing particularly to the soundness of resin formulation and effectiveness of resin treatment. Bradford's laboratory staff numbers 28, 8 of whom spend full time on work connected with resin finishing.

promotional and advertising campaigns were launched, primarily to retain consumer confidence in these new finishes. Believing that present day wash-and-wear cottons have not yet reached their ultimate state of development, these campaigns are based on the sound premise that the consumer should be fully informed about performance characteristics.

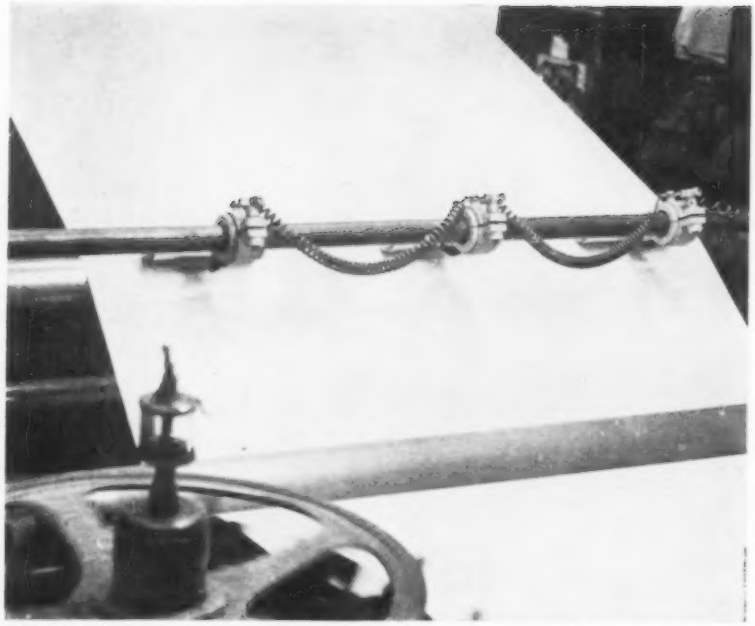
As a step toward this end, Bradford has made a sharp distinction between wash-and-wear fabrics and those which fall into the broad category of fabrics with crease resistant finishes. Fabrics labeled "Bradperma CMI" have been developed for automatic home laundering and drying. Besides possessing "minimum care" properties, they can withstand chlorine treatment without detrimental effect.

Important Properties of Wash-and-Wear Fabrics. To appreciate the developmental work that has gone into the CMI line it is worthwhile to list the important properties that must be acquired and carefully controlled in processing. With regard to some of these, Bradford makes no exorbitant claims, taking a conservative stand in line with its marketing policies.

1. Wash-and-wear properties. Essentially, the fabric must retain smartness of appearance after laundering, and its rating is dependent on degree of wrinkling. At Bradford, wash-and-wear fabrics are rated from 1 to 5—the highest rating indicating complete absence of wrinkles and bubbling. Fabrics in the CMI class qualify for a No. 4 rating. Some dye shades and colored yarn patterns can be given a No. 5 rating; white shirting fabrics, however, are given a No. 4 rating, since a small amount of ironing may be required.
2. Resistance to chlorine damage.
3. Adequate tensile and tear strength.
4. Abrasion resistance.
5. Sewability:
   a. Resistance to needle cutting.
   b. Resistance to seam slippage.
6. Durability of crease resistance after repeated launderings.
7. Resistance to scorching.
8. Lack of odor development.
9. Dimensional stability.
10. Color stability; in white fabrics, permanency of white.
11. Hand.

Of these properties, smartness of appearance after laundering, which implies considerably less ironing, and chlorine resistance rank highest in importance.

Control Begins with the Fabric. Though the responsibility for fabric selection and purchasing lies with Bradford's converter-customers, grey fabric evaluation for resin treatment is nevertheless an important part of Bradford's quality control program. The tensile test on the grey fabric is by itself of no great significance; but against a background of compiled data on resin-treated fabrics it indicates whether the fabric will withstand resin treatment. Should testing and experience indicate that a particular grey fabric is lacking in essential qualities for the CMI



After resin impregnation, in-process control includes checks on speed of tentering, drying temperature (even though automatically controlled), and percentage of moisture in fabric. The amount of moisture in the fabric as it enters the curing unit is determined by instrument (above) and registered on panel (not shown) in full view of operators and supervisors.

class, Bradford recommends it for a qualified use.

For the fabric that has met finishing standards and has become a production item, a continual testing program is carried on, which serves in effect as a "policing" action, thus insuring quality from shipment to shipment.

Following grey testing, the next important control point follows completion of preparatory operations. These include singeing and desizing, kier boiling (for best obtainable absorbency), bleaching, and mercerizing. If dyeing follows, testing is carried out after this operation. Except as otherwise indicated, tests are made for the following on each prepared lot:

1. Absorbency—for rapid and thorough penetration of resin.
2. Fabric cleanliness (visual inspection).
3. Tensile.
4. pH and alkalinity—percentage of alkali in fabric is more significant than pH determination. The fabric must be chemically clean to prevent adverse chemical reactions in finishing.
5. Whiteness—visual comparison against standards.
6. Degree of mercerization—luster is appraised visually. Barium-number determinations are carried out occasionally, supplying useful data on this operation.
7. Chemical degradation—fluidity measurements are carried out on randomly selected lots for comparison with previously compiled data on identical fabrics.

Upon completion of physical and chemical testing, the data on a given lot are carefully evaluated, and if found satisfactory, the finishing department is notified in writing to proceed with resin finishing. This procedure, rather than verbal communication, prevents any possibility of misunderstanding.

Along with in-process fabric testing up to this point, the chemicals and auxiliary products which make up resin formulations are also checked as part of the overall control program.

As to control checks at resin impregnation, the following are most important, and these are made by laboratory, production, and mechanical department personnel, as the case may be:

1. Uniformity of squeeze—rolls are checked for signs of wear, and turned down as required.
2. Resin liquor level control.
3. Wet pick-up testing to determine per cent of resin on weight of fabric.
4. Drying temperature control—although automatically controlled, a standard mercury thermometer is placed adjacent to testing bulb of the instrument to indicate accuracy of readings.
5. Drying speeds—checked by tachometer.

Curing and After-Washing. Bradford's gas-fired high temperature curing equipment calls for higher speeds and a shorter curing cycle, thus making control of this operation extremely important. Control tests on baking temperatures, frequency of air-change in oven, and speeds of curing are periodically carried out. A rise in temperature, if undetected, could cause yellowing problems, not to mention losses in fabric properties.

A thorough after-wash is called for to neutralize acidic products and to remove loosely retained resin from the fabric. Bradford considers this an important final step to prevent scorching problems and development of odor.

Frequent checks of chemical concentrations, temperatures, and water flows are made during this process, and the washed fabric is rigidly controlled for cleanliness and pH.

Testing Indicates Quality Achieved. Yardages for laboratory testing are selected at random from each of the finished lots, which have already been inspected for common production defects. The fabric is subjected to the following tests:

1. Tensile strength by grab method in accordance with ASTM procedure.
2. Tear strength by Elmendorf instrument, in accordance with Federal Specification CCC-T-191b.
3. Crease recovery angle measurement using the Monsanto wrinkle recovery tester. This test consists of creasing a specimen of the fabric under a standard weight and measuring the angle formed by this crease after the wrinkle recovery properties of the fabric have caused the specimen to unfold. This test is performed on the fabric as finished and also on a sample which has been subjected to

laundering with soap at the boil in a cylindrical reversing wash wheel. The latter test is designed to check the durability of this property under laundering conditions which are more severe than those to which the finished garment will be subjected.

4. Sewability:

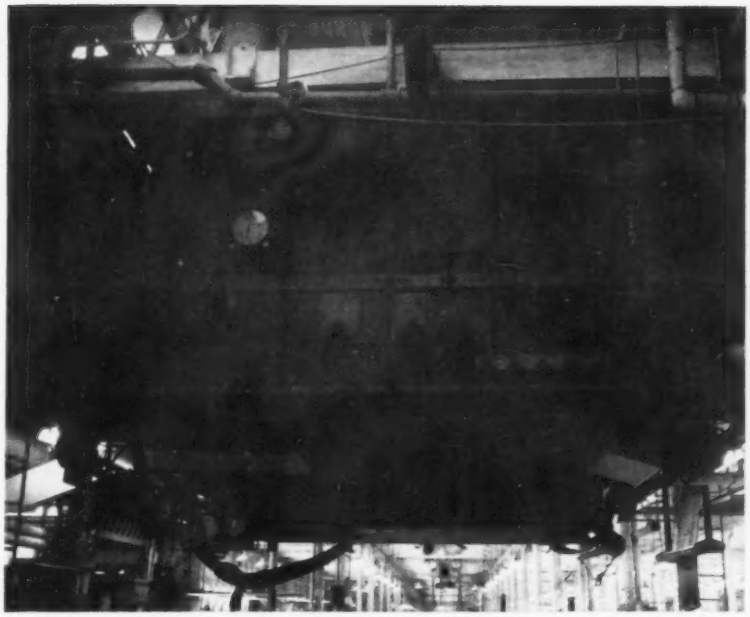
a. Resistance to needle cutting. A sample of fabric is cut in half and sewed back together again using a production model, double-needle, high-speed sewing machine capable of making a folded-over or fell seam. Seams may be sewed parallel to the warp, to the filling, or in both directions. After carefully removing the sewing threads, the seams are unfolded and the number of yarns severed by the needle are counted.

b. Resistance to seam slippage. This test is carried out in accordance with ASTM procedure "Resistance to Yarn Slippage of Woven Fabrics." The result is expressed in pounds required to pull out seam to a distance of ¼ inch.

5. Chlorine retention. The fabric sample and a control are treated in a standard bleaching solution for a prescribed period of time. Then they are thoroughly rinsed until the control no longer tests for presence of chlorine. The thoroughly rinsed, resin-treated fabric, after drying and suitable conditioning, is then tested for scorching and tensile. The procedure is to prepare raveled strips, scorch these, and follow with break tests, substantially in accordance with AATCC procedures for chlorine retention of cellulosic materials. The result is reported as per cent strength loss against the resin-treated fabric. The loss in strength of the Bradperma CMI finish does not exceed 10%.

6. Odor development. Fabrics finished for the Bradperma CMI line are tested for tendencies to develop odors by dampening them with a solution of soda ash and heating them.

7. Dimensional stability. This test is carried out in accordance with procedures used for fabrics bearing the Sanforized label. The bulk of the Bradperma CMI line goes into wash-and-wear shirting, calling for a shrinkage not in excess of 1%. Bradford uses its own Rigmel Shrunk process which achieves this required dimensional stability and affords a pleasing fabric hand as well.



Bradford's gas-fired, high-temperature curing unit calls for higher speeds and a shorter curing cycle. Control checks of baking temperatures, frequency of air change, and speeds are carried out periodically, to prevent yellowing and attendant losses in fabric properties. A thorough alkaline after-wash follows to prevent any scorching or odor formation.

8. Wash-and-wear testing. The laundering procedure as carried out at the Bradford laboratory is similar to methods used in the home, and is based on the proposed test methods of the AATCC Wash and Wear Research Committee. Fabrics are made into skirts and laundered in a home-type automatic agitator washer utilizing the full cycle. After the spin-dry, the "garments" are tumble dried in a home automatic gas drier and hung to condition before being rated. Repeated launderings also serve to test for color fastness, indicating whether colors are apt to bleed and mark off under load, or whether whites will lose their degree of whiteness.

Benefits of Quality Control Program Offset Its High Costs. To carry on its quality control program, Bradford maintains a staff of 28 chemists, chemical engineers, and technicians, whose duties and responsibilities are clearly defined. The laboratories are administered by a technical director, who reports directly to the plant manager. He is assisted by section chemists, who are specialists in specific phases of the laboratories' activities. These include analyses, wet processing and preparation, dyeing, finishing, and physical testing. Together with the technical director, these section chemists comprise the research committee.

Adequate interplant communications are afforded by periodic meetings, and by meetings occasioned by problems requiring more urgent action. All department heads, including the technical director and chief engineer, meet daily to discuss day-to-day production problems with the plant manager. The same group meets in an evening session once each month under the chairmanship of the plant manager to discuss technical production problems. At these meetings the vice-president is also in attendance.

In addition, the plant dyers, laboratory personnel, finishing department foremen, and laboratory representatives also meet once a week. And whenever necessary, special meetings are held at which department heads, who may be involved, discuss the problems at hand.

The research committee meets biweekly to consider fundamental research progress, possible econo-

mies in processing, new developments in finishes, and the like. New processes which are introduced into the plant remain under laboratory control and supervision until all are satisfied that the desired results are being obtained. Only then is the process turned over to the plant.

Obviously, the broad scope of Bradford's quality control program, which requires a large staff and extensive laboratory and testing facilities, is a costly one to maintain. Since the plant is a diversified one, synthetic fabrics and blends are processed as well, and also fall within the scope of the program.

But from management's viewpoint the extra work involved is more than offset by benefits in quality improvement and uniformity. Moreover, through continual evaluation of resins and chemical materials, augmented by actual wear testing, the program affords rapid adoption of newer and improved formulations as they are developed.

Past, Present, and Future *(from page 102)*

stead of $1.25, in which case both they and the textile industry can benefit.

Perhaps ultrasonics or electrolytic developments will revolutionize the whole system of cleaning garments. Also, the maintenance industries may take the initiative in "treating" whole garments with nondurable finishes which will improve appearance during wearing, and thus make a strong bid to preserve their position as cleaners.

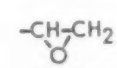
One should not overlook, either, the prospect of garment manufacturers durably treating whole garments, "setting" the materials into the desired contours rather than assembling pretreated flat fabrics. There are attractive aspects of such a system, and it may prove the best answer to seam puckering and other not completely solved problems of present systems.

It is recommended to the textile industry that it keep its sights squarely on the ultimate *objectives* of wash-and-wear, and not become overly enamored or too reliant on any one means of achieving these objectives. Any development, no matter by whom it is done, that will minimize the chores and expenses of apparel maintenance, can favor the textile cause if proper planning is done to take advantage of it.

Wash-and-wear as we now know it may be only a stop-gap measure, or a partial measure. As much or perhaps even more can be gained in improving the economics and convenience of cleaning and pressing systems, both household and commercial, or in systems for treating the whole garments. Certainly there should be no slackening of emphasis on the "during-the-day" appearance of garments in use. That may yet prove the bigger value in wash-and-wear type treatments, with better answers to the washing and pressing problems obtained by other means.

Wet Soiling *(from page 107)*

chemical types of products. For example, some exploratory tests have shown that while some homopolymers of the lower acrylic esters are generally bad in wet soiling retention, co-polymers of these same acrylic esters which contain the following reactive groups:

Carboxyl	–COOH
Epoxy	
Amide	$-CONH_2$

have better wet soiling resistance, presumably due to crosslinking or curing of these copolymers on the fibers by the basic creaseproofing resin, all of which can react with the above groups to change the softening point of the polymers and alter their specific attraction for certain soils.

CONCLUSIONS

There is much to be investigated to learn about and solve in all cases the problem of wet soiling of resin treated fabrics. While it has been argued by some that this is not a universal problem in wash-and-wear garments, the fact remains that under localized conditions of laundering, complaints do persist that some resin treated garments are progressively more soiled during normal use and laundering conditions.

Because there are no completely satisfactory methods for studying wet soiling properties, there is need to evolve one or several meaningful tests which will relate to end use performance. The culprits in this problem do not seem to be the wash-and-wear resins themselves, but some of the additives which are needed for enhanced effects.

In those cases which are known from practical observations, substituting one additive for another chemical type will solve the soiling problem, but may introduce other problems of inefficiency or costs which cannot be tolerated in certain finishes.

Make customer complaints pay off

by Frank Vogel

Exclusive

EVERY textile mill must at some time expect customer complaints. To have an inspection system so thorough that no faulty material will get out on the market would, from a financial standpoint, be a prohibitive undertaking.

This is particularly true of mills making little items such as twines, embroidery skeins, sewing yarns, narrow fabrics (elastic and non-elastic), and the other numerous small units that make up the content of a notions counter in department and chain stores. However, small and insignificant as they might appear individually, their aggregate sales run into millions of dollars annually.

Customer complaints can be a spur to goad the mill into a more vigorous campaign to keep faulty work from reaching the market and to contain these efforts within the framework of reasonable inspection.

It is a good idea for every mill manufacturing the small item just mentioned to encourage customer complaints—on the theory that it is better to have the complaints out in the open where steps can be taken to hold the faults in question down to a minimum rather than to have a disgruntled customer turn to a competitor's articles without complaining.

It seems to be a fact that many people hesitate to register a complaint on such a small item as an embroidery skein, a spool of sewing yarn, or a yard of narrow fabric. How many customers a mill loses because of this hesitancy is a moot question, but if the natural aversion of a majority of people to complain about so-called trifling items is any criterion, then there certainly must be quite a percentage. Therefore, the mill should welcome the people who do have the courage to point out the faulty material.

This article will discuss products of cotton and rayon mainly, and for simplification, the faults in ply-yarns and products manufactured therefrom will be taken up

for illustration.

Some Causes of Complaints. Some of the faults that may get out on the market and cause customer complaints will be reviewed, but no special attention will be given as to the type because any one of the many potential faults may pop up any day.

Thick Places. To a fastidious customer, perhaps one of the more annoying small faults that are in the product is the thick place in an individual end of a ply-yarn. These thick places come from spinning slubs and from spinning piecings.

A sensitive clearer test made by the mill will verify the multiplicity of this type of fault. They detract from a perfect piece of crocheted or embroidered work. They may also give trouble at the sewing machine whether used for embroidery purposes or otherwise.

Too many plies in a ply-yarn, such for example as a four-ply instead of the conventional three-ply, may also spoil a good looking piece of art work. Likewise, insufficient plies will also detract from the appearance of the article.

Again, ply yarns with little or no twist can be the despair of a woman striving for a beautiful bit of handiwork, perhaps for a prize entry at some church affair. On the other hand, an overtwisted ply yarn may also be objected to by the customer.

Another annoying fault is the entanglement of bits of loose yarn that have become twisted into the product and cannot be removed without cutting out a portion of the finished material, thereby interfering with first-class sewing or embroidering.

Many of the complaints will be based on the dyeing quality of the material. Articles advertised as fast to washing sometimes bleed and become subjects of complaints. Occasionally the mill will change a shade slightly from a previous standard for improvement purposes. Unless all the old shade is taken from the stores complaints may be expected to come in.

Moreover, the difficulty the dyehouse has in matching shades precisely from one dyelot to another is frequently a source of complaint from users of the goods. Some mills suggest, on printed notices placed on the product, that the customers purchase enough material at one time to permit the whole piece of work to be made from material from the same dyelot.

However, the customer is not always financially in a position to buy all the required material at one time; again she may miscalculate the total amount required. In either case, when she does buy the remaining amount of material needed the difference in shade may be quite outstanding.

In line with troubles originating in the dyehouse there may be further dye matching trouble because of errors made elsewhere. For example, a disconcerting thing to a woman who is working on a piece of embroidery is a mill error in numbering the colors.

The customer, let us say, requires some more of color 41. She purchases her requirement by color number, the same number she has been working on, but finds when she gets home that the shade is not the same. The error has been made either by the printing department and was overlooked by the personnel in the finishing room, or a wrong sticker has been applied by some worker. Naturally, a complaint is put in by the customer who may indeed be greatly inconvenienced by the error.

Sometimes the color number on the band of a skein may not coincide with that on the outside of the box. This is another cause for complaints. Indeed, there are so many ways in which annoying color confusion can be brought about that particular attention should be directed to avoiding such errors.

Investigate and Act. Is the customer always right? In the small goods trade it probably is best to consider him or her so. After all, replacement of an embroidery skein or two, a ball of crochet, a spool of sewing yarn, a yard of narrow fabric to a complaining customer is good public relations policy. And it doesn't cost much.

However, when it comes to large pieces of crocheted work, bedspreads and the like, in which not only the cost of the material employed, but also that of the labor in making the article is involved, a good long look should first be given the complaint.

The personnel of the testing and chemical laboratories should be called on to give their opinions after a due process of investigation. If the mill does not have the foregoing departments, there are commercial laboratories that may be called upon.

Sometimes a dyestuff examination will reveal that the material or parts thereof are the product of some competitor. At any rate the decision as to replacement or reimbursement should be made by the top level management.

Sometimes after a large crocheted piece is washed it will be found to have sections here and there which vary in shade. It is well to check the records to ascertain if there has been a change in the cotton used somewhere along the line, or a change in the wet processing formulas. Sometimes changes are undertaken by management with the idea that a calculated risk of consequences can be made. Sometimes nothing happens, other times the complaints roll in.

Generally speaking, however, giving the customer the benefit of the doubt is often the best policy, even if the evidence points to the fact that she may have been using competitive material in her work. Of course this procedure may involve payment for the labor that the customer has put into her article. Each complaint, obviously, must be judged by the facts unearthed about it. No hard and fast rule should be insisted on.

The types of complaints and the kind of people who make them are often interesting and surprising. The writer recalls one customer complaint that he investigated. It came from a woman who lived but a short distance from the mill.

On visiting her I found that she was sewing a heavy corduroy cloth with a sewing yarn fitted only for much finer work. When slightly heavier yarn was threaded into the machine no further trouble ensued. Now here was a case of a woman who had been using sewing machines since she was a young girl, yet it never oc-

curred to her that a slightly heavier yarn was indicated. And this in spite of the fact that the notion counters of all the chain stores carried the heavier material.

Sometimes a customer will write a complaint letter to the mill. Quite often, too, the letter is sarcastic; sometimes the customer even threatens to stop all further purchases of the mill's products and buy those of a competitor.

One mill found that it paid off to write a cordial reply, sympathizing with the customer and assuring her that everything is being done to prevent just such an unfortunate happening; also sending her a few units to make up for the inconvenience occasioned her.

Complaint Department. It is advisable, for the sake of promptness, to have one person or department handle all complaints. They are then quickly answered and the complaint, and material if some accompanies it, can be forwarded to the mill for their investigation and remarks. All the complaints are then localized in some central section where each is readily available at any time.

Rapidity and tactfulness in handling complaints often saves customers. The mill, too, must do everything it can to expedite the report to the complaint department in the event that further correspondence is advisable.

Obviously to make certain that the customer complaints for any particular mill are kept at the lowest possible point there must be a determined effort in that mill from top level executives down through the workers to assure that the object desired is attained.

One very effective way to keep the faulty work at a minimum is to maintain a graph of the customer complaints. Such a device is easy to follow, particularly at supervisors meetings. Again, an additional chart of the most prevalent types of faults causing complaints helps to pinpoint the activity required to reduce that particular type of customer "gripe."

Supervisors, after the meeting on complaints, should take the complaint and faulty material to their departments and show them to the workers.

Of course the whole object in these maneuvers is to prevent the faulty goods from getting to the market. An effective method to insure maximum inspection in the finishing departments is to recheck a measure of material that has passed the inspection department. A few items from each inspector will do much to keep the inspectors "on their toes."

Sometimes complaints on small items arise because for one reason or another the material has been "knocked around" in the store until it is quite soiled or otherwise shopworn. One mill executive found some goods from his mill that had been in one of the most up-to-date department stores for ten years or more, and the colors were in quite a deplorable state.

A yearly check of the stock in the stores by the salesmen will eliminate much trouble from this source.

Customer complaints inevitably arise. But if diplomatically handled, with proper explanation to the customer, there is no reason why the customer, whether a store or an individual, should not be kept on a well-pleased basis. For customers, after all, determine a mill's rise or fall.

How to measure yarn speed on a drum winder

■ ALTHOUGH a drum winder is looked on as a constant-yarn-speed machine, actually this is not so. There is a slight amount of slippage between the driving drum and the surface of the package. This slippage is greater when the package is small than when it is at maximum diameter. It is greater when winding cones than when winding parallel tubes.

Another cause of slippage is the periodic slowing down of traverse rolls. From time to time these rolls are decelerated purposely on the Roto-Coner to prevent ribbon wind.

Even though it isn't strictly correct to call a drum winder a constant-yarn-speed machine, the actual variation in yarn take-up speed is so small that it makes very little difference in production figures. For calculating production, however, the average yarn speed from start to finish is used to compensate for the varations we have just mentioned.

The constants shown in the table may be used to determine the actual average yarn take-up speed on the Roto-Coner. As the table shows, the constants vary for the different types of packages. When the constant for a particular type of package is divided into the revolutions of the traverse rolls, per minute, it gives the average yarn take-up speed for a 5- to 8-inch diameter package. The constant takes into account the slippage from start to finish of the package.

When determining the speed of the traverse rolls for the purpose of making this calculation, the full speed of the rolls between power interruptions should be used. A tachometer reading should be taken to calculate the formula accurately.

While the table is accurate for the 3-inch diameter traverse rolls on the Roto-Coner winder, it may not be accurate on other drum winders.

The actual yarn take-up speed can be tested by taking a half-full cone on the winder, and without tying the end, winding onto it for two minutes. Reeling the yarn off to the break and computing the yards per minute will give the actual average take-up speed.—*Twists and Winds*, Universal Winding Co.

Average Yarn-Speed Constant for Roto-Coner

Package	Constant
9°36′ or 9°15′ Cone	4.2
5°57′ or 3°30′ Cone	4.0
Parallel Tube	3.9

$$\frac{\text{RPM of Drum}}{\text{Constant}} = \text{Average Yards per Minute throughout winding of package 5" to 8" diameter}$$

Effective training aids are easily prepared from

EVENNESS CHARTS

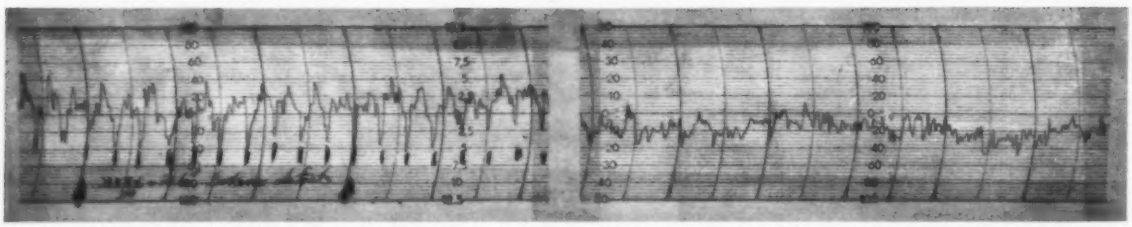


Figure 1. These charts show the variations present in sliver from one card before and after the front end gearing was cleaned and meshed. The variations repeated every 21.6" of sliver, and they probably were caused by gears or rolls on the front of the card. The uncontrolled draft from the opening of the trumpet to the coiler calender rolls is included in the list of possible suspects. On both charts the tester was set on eight yards per minute material speed and four inches per minute chart speed.

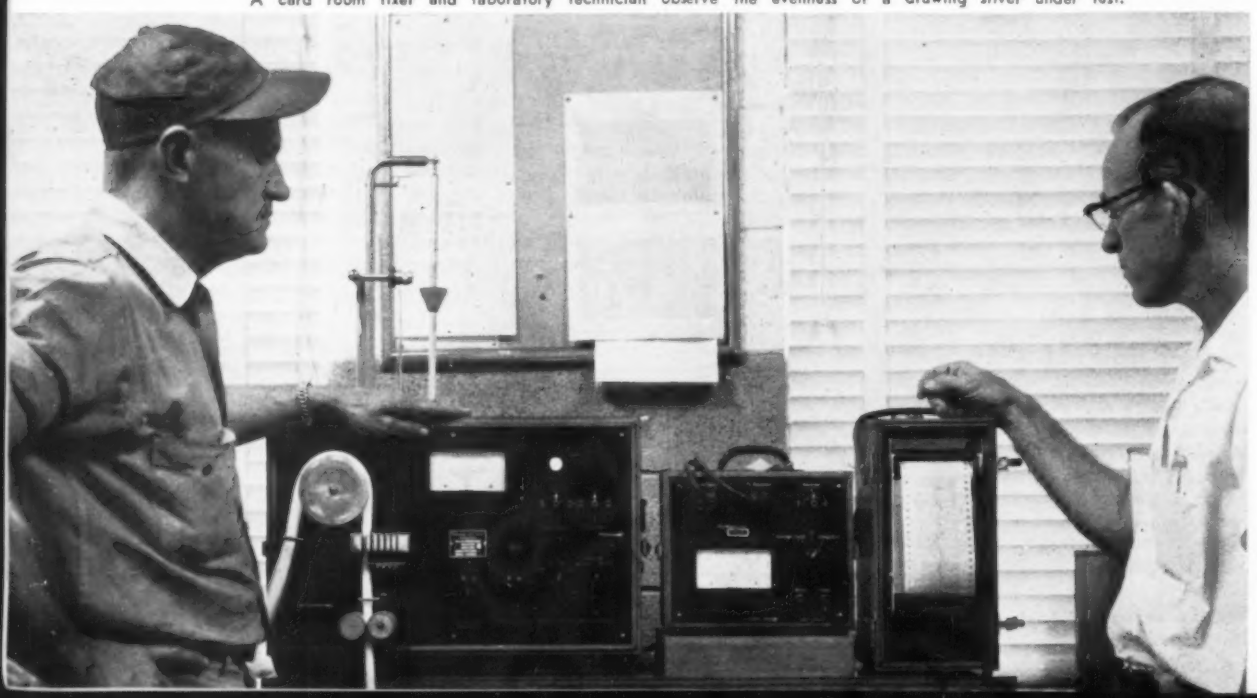
by Ivey Howell
Exclusive

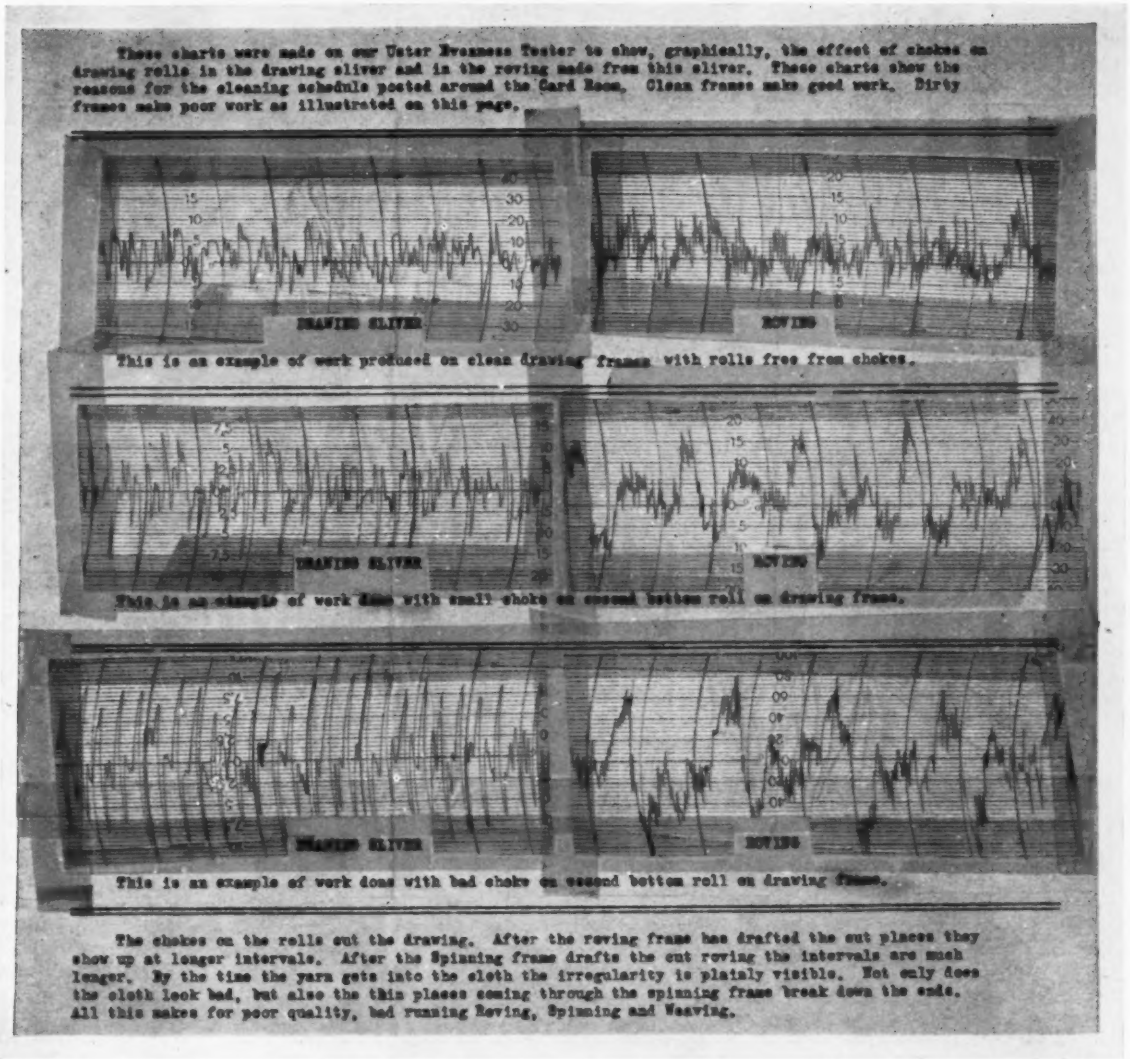
THE HEART of the quality control program at one southern cotton mill is the evenness tester. This mill uses it in many ways, all for good purposes. However one of the better uses to which the tester is put is as an aid to training. The illustration on the opposite page shows how the charts are mounted, with a few words of explanation, and used as a graphic example for instructing drawing tenders.

The plant's card room is equipped with high speed drawing which does a wonderful job as long as the frames are kept clean and the rolls free from chokes. However, there are certain times at all mills when the cleaning schedule is not rigidly followed. During these times illustrating the damage caused by cut drawing is most valuable. Also the illustrations may be used when everything is running well around the drawing—a prod to show what will happen if the cleaning schedule breaks down.

Probably the best approach to the problem is to have the laboratory man (who is trained in the operation of the tester, and who should know the drawing operation thoroughly) meet with the supervisor and the drawing tenders on each shift. The laboratory man should be brief and

A card room fixer and laboratory technician observe the evenness of a drawing sliver under test.




These charts were made on our Uster Evenness Tester to show, graphically, the effect of chokes on drawing rolls in the drawing sliver and in the roving made from this sliver. These charts show the reasons for the cleaning schedule posted around the Card Room. Clean frames make good work. Dirty frames make poor work as illustrated on this page.
DRAWING SLIVER
ROVING
This is an example of work produced on clean drawing frames with rolls free from chokes.
DRAWING SLIVER
ROVING
This is an example of work done with small choke on second bottom roll on drawing frame.
DRAWING SLIVER
ROVING
This is an example of work done with bad choke on second bottom roll on drawing frame.
The chokes on the rolls cut the drawing. After the roving frame has drafted the cut places they show up at longer intervals. After the Spinning frame drafts the cut roving the intervals are much longer. By the time the yarn gets into the cloth the irregularity is plainly visible. Not only does the cloth look bad, but also the thin places coming through the spinning frame break down the ends. All this makes for poor quality, bad running Roving, Spinning and Weaving.

Reproduced above is the actual chart used for training drawing tenders in a southern mill. Later it was posted on the bulletin board in the card room to remind personnel of the importance of keeping machines clean. Note that clear cellophane tape was used to fasten the six charts to the backing (green mimeograph paper in this instance). Typing was done before charts were taped down.

concise and should *never* invade the supervisor's area of command.

At the start of the meeting the laboratory man will explain what happens when cut drawing is made and how this cut drawing is detected. However, the supervisor is the man to say what steps are to be taken to insure the cleaniness of the frames. This is the object and purpose of supervision, and the laboratory man must not intrude on this ground.

After all persons concerned with running drawing frames have been seen and included in such a meeting, the mounted charts may be posted on the bulletin board, or wherever the daily hank report is posted. It is well to change the charts at intervals so the idea that "cleaning is necessary" for good running work will not get stale.

Another outstanding training aid is found when using the tester to point up and detect lint-choked gearing on the front end of the card. When card gearing (upright shaft, can table, calender rolls, and the chain driving these items from the doffer) becomes choked, excessive unevenness (as in Fig. 1) is bound to result.

These defects are relatively short term in nature and generally are rather well defined. This makes the job of detection a simple one—these short variations show up prominently on the tester graphs. However, the variations are not necessarily repetitious in appearance. One particularly prevalent variation which is repetitious in nature is a defect which repeats in 21 to 23 inches of card sliver.

It is doubtful that a defect which repeats at longer distances is caused from the area of the card which we are discussing here. The point being made is that the mathematical implication is important; however, the mathematical implication is not within the intended scope of this article.

To illustrate the case: Suppose periodicity were noted and, mathematically, the gear driving one specific roller were pinpointed. If in this case six or seven gears are involved and all are choked to

some extent with oily lint and waste, it is hardly likely that either the department supervisor's or the laboratory's recommendation would be to clean the one gear which the tester showed to be causing the variations.

Obviously, the proper action to be taken is to clean the whole train of gearing, thus eliminating the source of the present variation and at the same time reducing the possibility of similar variation in the future.

With these facts firmly in mind, the next logical step in good operating practice is to inform the party or parties responsible for the good operation of the cards of the necessity for maintaining clean card gearing. Frequent and regular intervals should be set up for testing the sliver from every card.

When a card is found with repetitious defect the graph should be saved. This card is then stopped and stripped of its gear covers. The tube gear and can table should be removed and meticulously cleaned.

Starting with the production gear and working forward through the calender roll gears, gears on upright shaft, and can table drive and coiler head gears, all teeth should be cleaned thoroughly. After cleaning, the gearing should be oiled with just the right amount of oil. Oil in these places must be applied with caution for there is always the likelihood of contaminating the stock being processed.

A sample of sliver from this card may now be run and in all probability (if the defect previously shown were caused by choked gearing) the graph will be very good. The short term variation will be greatly diminished, obviously improving the quality of sliver.

The improvement shown in one or two cards has a greatly exaggrated effect if the graph showing the better work is passed around to all persons concerned. The card tender can plainly see the good effect of cleaning. The card fixer or grinder proves to himself the necessity of cleanliness and good oiling practices which he already knew to be intimately associated with good quality carding.

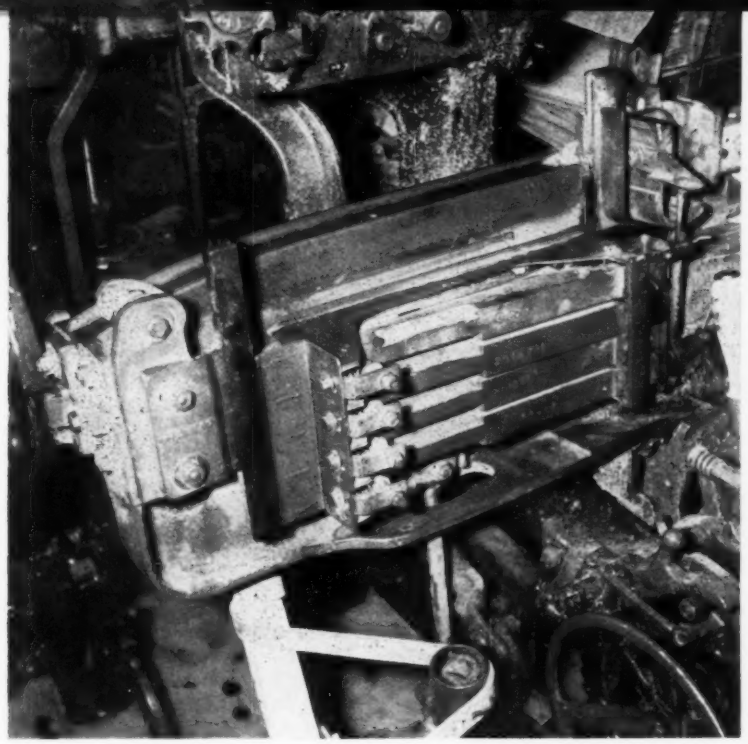
The department supervisor may be supplied with a good tool for properly evaluating the condition of his department. And, the quality control department finds it has another vital checkpoint in its constant search for methods and product improvement.

Progress report on variable-speed spinning of woolens

■ TESTS completed in Davis & Furber Machine Company's plant indicate that a substantial increase in production of woolen system yarns may be expected from variable speed spinning. (Commercial availability of a variable speed drive for this manufacturer's new or existing Model F and Model G ring spinning frames was announced in last month's New Product Parade, p. 233—The Editors.)

Compare in the accompanying table, which was recently published by Davis & Furber, the average front roll and spindle speeds reported by mills using constant speed frames with the results obtained on the test using variable speed frames. Also note the number of ends down per 1000 spindle hours. For accurate comparisons, the machinery builder explained, matching test figures on the variable speed frame were obtained (in each of the four examples) by duplicating the same mill conditions—using the same frame specifications with the same identical roping. The same spinning rings, travelers, bobbins or paper tubes were used, and each run was long enough to establish a pattern of continuous performance.

	Card Room Weight in grains per 50 yd. reeling	Spinning Room Weight in grains per 50 yd. reeling	Draft	Twist per inch	Spinning Ring description	Ring Lubrication	Traveler weight in grains	*Mill's max.* operating front roll speed on *Standard* Frame	*Variable Speed* Frame front roll speed *max.* on this test	*Variable Speed* Frame front roll speed *average* on this test	*Mill's* Spindle Speed on *Standard* Frame	*Variable Speed* Frame Spindle Speed *max.* on this test	*Variable Speed* Frame Spindle Speed *Average* on this test	Ends down per 1000 spindle hrs. on this test
Carpet Stock all wool blend	255	195	1.31	4 LHT or Z	5" Herr		11 grain	172 RPM	260 RPM	215 RPM	at 172 RPM was 2700	at 260 RPM was 4150	at 215 RPM was 3410	90
Flannel Yarn all wool blend	140	82	1.70	10 RHT or S	5" one spot	Lincoln injection system	7 grain	95 RPM	140 RPM	115 RPM	at 95 RPM was 3780	at 140 RPM was 5550	at 115 RPM was 4550	110
Meltons reworked stock	226	170	1.33	9 LHT or Z	5" one spot	Lincoln injection system	12 grain	82 RPM	115 RPM	100 RPM	at 82 RPM was 2880	at 115 RPM was 4100	at 100 RPM was 3550	124
Rayon Blankets Stocks	266	208	1.28	5 LHT or Z	5-½ one spot	Lincoln injection system	A-20 nylon	150 RPM	204 RPM	185 RPM	at 150 RPM was 2945	at 204 RPM was 4025	at 185 RPM was 3630	114



Trouble shooting box looms

Check shuttle boxing. Boxes must be properly aligned with binders not hanging the filling.

The magazine must turn to the correct cell and lock there for the transfer. Nozzle must be adjusted for the correct vacuum and latch must hit bunter accurately.

by George Williams

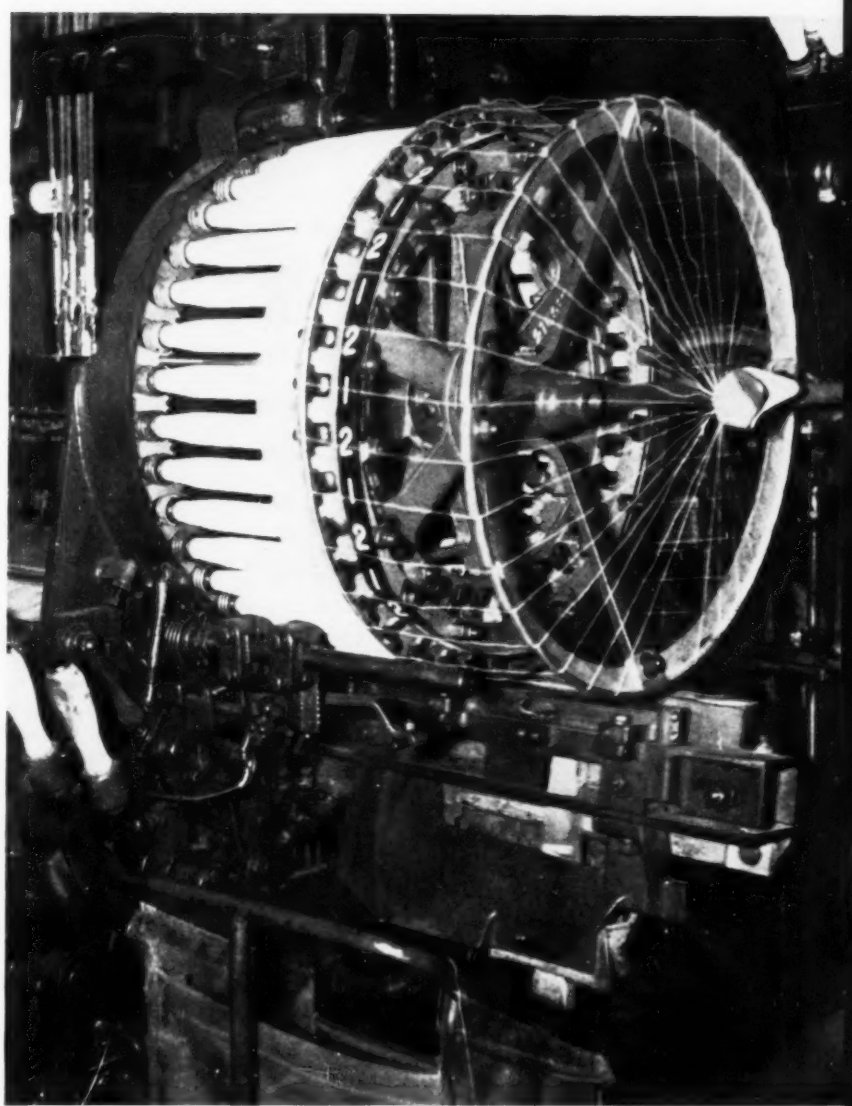
Exclusive

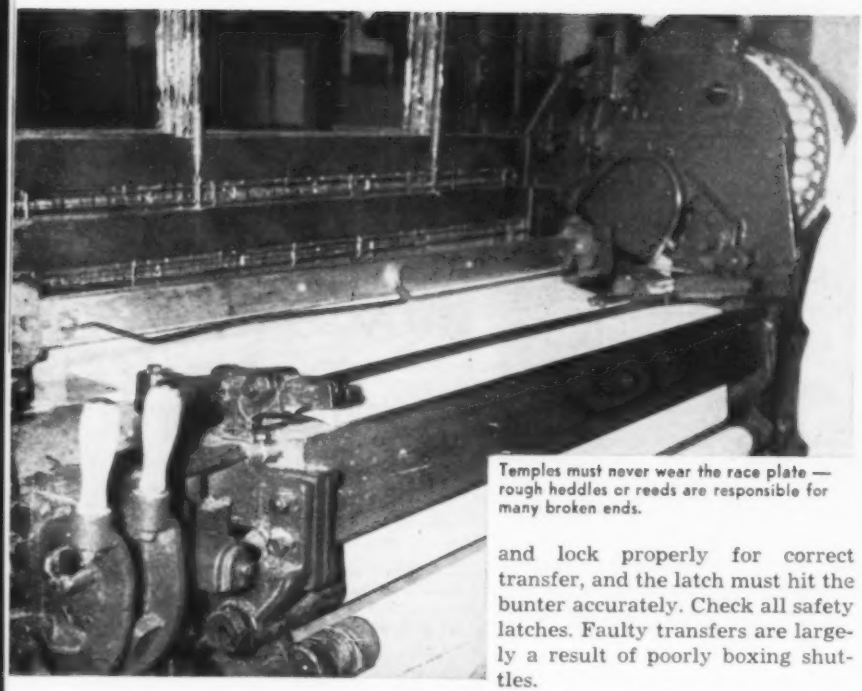
SEVERAL important and basic procedures should not be carelessly overlooked in fixing box looms. Items to be checked routinely are oftentimes most important when a loom is flagged, and they are worthy of enumeration.

Flags are most often put up on looms for slam-off or bang-off. When this occurs, the correct procedure is to check picker, picker stick, picker rod, pick shaft, and lugs to see if any of these items are broken or binding. Then start the loom to see if the shuttle is boxing right. Check to see if boxes and reed are in line. Check the protector rod and fingers and friction. Be sure the pickers are parallel at front and back, and be sure to check warp tension.

Be certain the shed is set ¼" over the shuttle wall with loom on back center, and don't let the shed drag the race plate at back center.

The second most frequent reason





Temples must never wear the race plate — rough heddles or reeds are responsible for many broken ends.

for flagging most box looms is for broken filling. In this instance it is desirable to look first at the shuttle, check fur or bristles, and see that the shuttle eye is not broken or loose.

Sometimes the eye has a groove worn in the pads or pins. If the shuttle has a pad in the eye, check to see if the springs are broken, and see that the shuttle does not have rough places on the side wall.

Shuttle boxing will bear checking, making certain that filling is not hanging on the binder. Be sure the temple is not cutting the filling and that the shuttle is not raising in the box. Keep good pickers, bumpers, and box tops on at all times.

The third most frequent offender for flagging is for quills hanging or missing on the transfers. If this happens, see that the shuttle is ringing up 1½ rings. The shuttle may not be boxing properly, or the pick and stroke may not be properly set.

The amount of power may be too much or too little, or the lay may not be timed right. Also, the pitman arms must be tight.

It is important to have the hammer going deep enough and hitting the quill correctly. The magazine must turn to the correct cell and lock properly for correct transfer, and the latch must hit the bunter accurately. Check all safety latches. Faulty transfers are largely a result of poorly boxing shuttles.

The fourth important cause for flagging is jerked-in filling on the magazine side (or box side). Jerked-in filling on the magazine side is caused by failure of cutter to sever the filling or of the nozzle to pick up filling after it is cut.

See that the cutter is not hitting the box front or wall of shuttle, and be sure the cutter is opening and closing right. Cutter blades must be sharp, and the cutter must be timed right. Also, the nozzle must be adjusted properly with adequate vacuum. Sometimes the filling hangs on the box front or the picker.

Jerked-in filling on the box side is caused by filling hanging or twisting to filling from other boxes.

If the jerked-in thread is over five inches long, the filling must be hanging onto something, perhaps a rough place on the lay end, or a broken or rough place on the box.

Short jerk-ins are usually caused by filling twisting together, and this car be stopped by using flannel, fur, or a wire for a separator. The temple must not drag against the race plate, and the shuttles must be boxed right.

The fifth most prevalent flag is usually for broken picks and center kinks. When this trouble occurs, first check the filling fork to see that it is set right and not binding, and be certain not to run too much tension on the fork.

The fork blades should not be too long. Shuttle fur must be in good condition, and the shed must not be too high off the race plate. It is important that the knock-off dog is held positively on the shaft so it does not slip. Brakes should stop the loom ½" before the reed hits cloth when filling is broken.

The sixth most frequent cause for flagging box looms is for broken warp ends. In such instances, the first thing to do is check the shuttle for rough places and a loose shuttle eye. Harnesses should be checked and set so the warp ends do not rub the race plate and will clear the shuttle ½" when loom is on back center. Level all four boxes with a straight edge and see that the box motion is timed right.

Shuttle guards should not be too high or too low. Pick and stroke as well as bumpers should be checked, and temples must hold cloth selvages extended properly. Rough harness eyes or reeds are the cause of many broken warp ends.

Statement of Ownership

Statement required by the act of August 24, 1912, as amended by the acts of March 3, 1933, and July 2, 1946 (Title 39, United States Code, Section 233) showing the ownership, management, and circulation of TEXTILE INDUSTRIES published monthly at Dalton, Georgia for October 1, 1958.

1. The names and addresses of the publisher, editor, managing editor, and business managers are: Publisher, W. R. C. Smith Publishing Co., Atlanta, Ga.; Editor, George H. Deekray, Atlanta, Ga.; Managing Editor, J. Frank Guest, Atlanta, Ga.; Business Manager, John C. Cook, Atlanta, Georgia.

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JOHN C. COOK
Business Manager

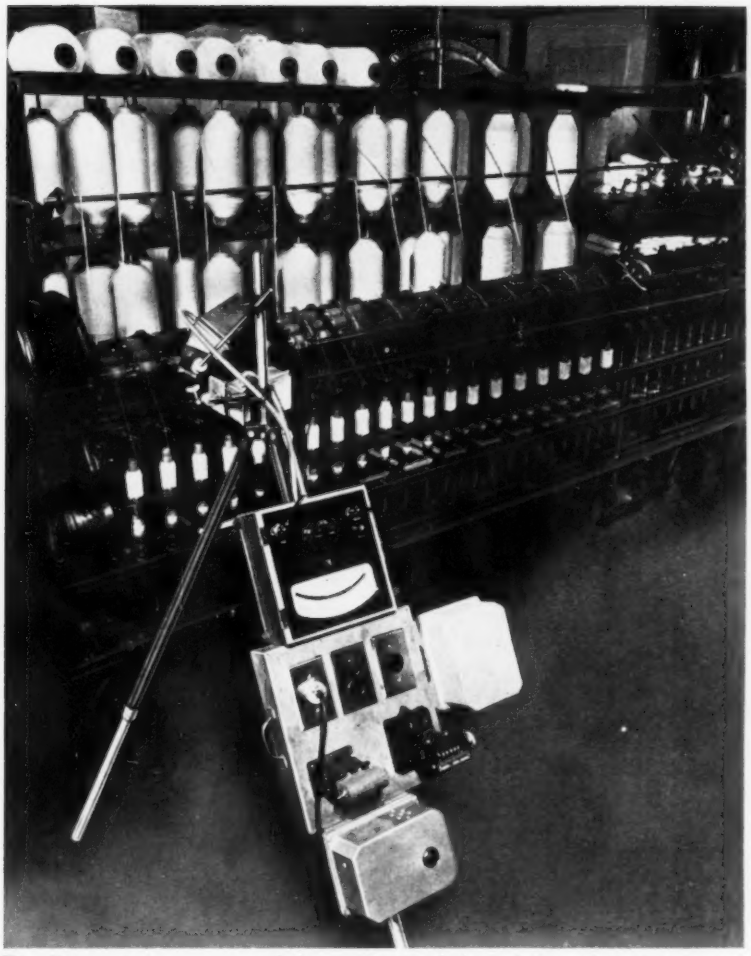
Sworn to and subscribed before me this 15th day of September, 1958.

SEBA J. JONES, Notary Public
[Seal]

My commission expires February 23, 1962.

A look inside spinning drafting

Roll weighting and slippage and static are examined



This slippage tester uses a revolution counter to clock revolutions of the bottom steel roll. A photoelectric counter uses reflecting glass beads to count top roll turns.

by Robert Rulon Miller
President
Dixon Corporation

Exclusive

ONE of the problems with the whole textile industry, both with the manufacturers of yarn and cloth and those who make the machinery for this purpose, is that we spend so much time trying to make a dollar that we won't sit back and do some real thinking. This is an American habit, not just a habit of our industry.

Stop and think for a minute and you will realize that nearly everything new, certainly in the textile industry, and in the automotive industry as well, has come from abroad.

Our long draft as we know it today, both Casablancas and Roth, is European. Our components, our weighting and guiding devices, the elimination of cap bars, the umbrella creel, the modern spindle—all of these things are European in concept.

The old story in the automobile industry is that the only thing on a car that's American is the self-starter. Many things like automatic transmission and seal beam headlights are European.

What we Americans have the ability to do is to take an idea from someone else and produce it by the millions. Beyond that, we are not a group of people who are outstanding in creative engineering.

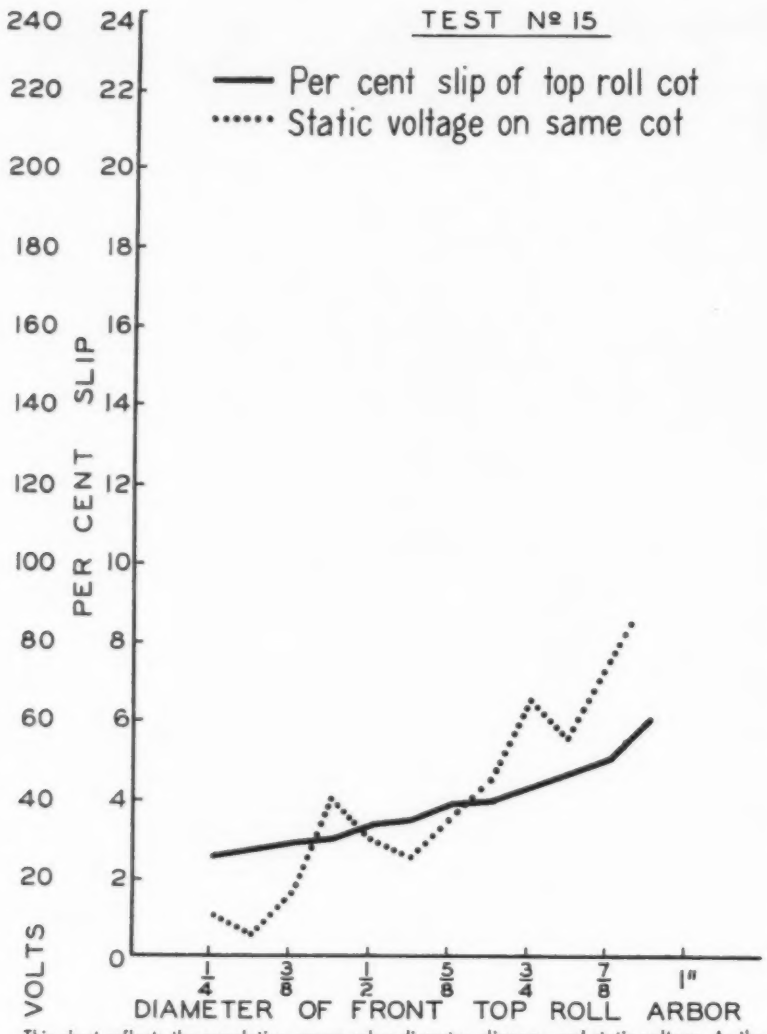
Our company allows about five years from the time we think of a product until we can realize a profit on it. We think of hundreds of products, and perhaps only one of them is worthwhile.

What we should be doing, and what somebody should be doing somewhere in this country, is to go back to the cotton plant, or maybe to the bales, and say: "O. K., here are some fibers. How do we best get these fibers into a pair of socks or into a piece of cloth or into a yarn?"

We should set up a research group—some who have never seen a spinning frame, along with some who have. We should get completely fresh ideas, because the textile industry is operating with the same basic ideas the Egyptians used.

All we've done is use electricity and move things by power rather than by hand. We are no worse than other industries.

You could say the automobile is still like the horse and wagon—instead of the horse out front, they



This chart reflects the correlation among arbor diameter, slippage, and static voltage. As the arbor diameter increases, both the roll slippage and the static voltage increase.

have the engine—and to a certain extent that's true. So we shouldn't criticize our own industry too much. There is a tendency to condemn the textile industry, yet since the war, it has been one of the most progressive industries in America.

Drafting. Let's get into what our company has learned about drafting. What spinners are doing in the drafting element of a spinning frame is feeding in fiber strands containing a small amount of twist and consisting of fibers that have been parallelized in previous operations and drawing the fibers apart to reduce the strand size.

We want the strands drawn down to a fiftieth or a hundredth of their original sizes. We wish to do this in a precise way.

The fibers are fed between three pairs of rolls. The back pair of rolls holds the fibers while the middle pair turns somewhat faster. This removes the twist and starts some of the drafting.

The real business is done between the middle pair of rolls and the front pair of rolls, as the front rolls are turning maybe thirty times or fifty times as fast as the middle rolls. The rolls have to be set far enough apart so that the individual staple isn't broken.

We are trying to learn what's the best way to draft yarn—what's the most efficient way—and we've gotten down into some details on drafting parts.

For instance, we're interested in friction, in studying what friction is. All these parts are hindered by friction.

We are interested in static. Static doesn't help either. Since the fibers develop static, wouldn't it be nice if we found that we could charge the yarns positively and negatively and that they would in some way become parallel electrostatically?

These are wild thoughts, but ones we must not completely forget. We're interested in weighting and what effects it has. We are also interested in roll speeds. We are interested in materials, the kind of materials we use.

Weighting. First, let's mention weighting because we have a theory on weighting that is very simple and different from many. The tendency today is to solve a drafting problem by putting on more weight, and nine times out of ten that will solve the problem. American spinning frames are much more highly weighted than other spinning frames in the world.

There is a very simple statement about weight: "You need only enough weight on your top rolls to prevent the fibers from being pulled out of the bite of the roll." You want to retard the fibers, and the pulling should be between the rolls—the fibers shouldn't be pulled from between the nip of the rolls.

Unnecessary weight is useless. It causes wear. It causes power wastage. It causes material wastage. It does little good. The reason it solves drafting problems is that additional weight causes other things to happen.

The additional weight gives more bite to the cot. It flattens the cot out. Couldn't this be accomplished by having a cot of a lower durometer hardness?

The added weight may also make a better drive for the top roll and eliminate slippage between rolls. This certainly can be accomplished in other ways.

The weight may even take whip out of the bottom steel rolls. Maybe there is vibration, and this extra weight just steadies the whole

drafting element.

All of these things can be solved by other methods, but every manufacturer puts on more weight to solve drafting problems.

Our company has erred in this regard too. When there is a problem in a mill and there are a couple of hundred thousand dollars or more tied up in it, and putting a half pound weight on the lever solves the problem, you're bound to walk away happy and relieved. We do try to find other reasons for these problems and other solutions.

Friction and Roll Slippage. Let's speak of frictional and wear problems which tie into the weight problem. Roll slippage is something that very little has been known about.

Very few mill men would admit that every time their bottom roll turns a hundred times, their top roll, at best, is only going to turn ninety-seven times. This is at best.

We have measured a mill where the bottom roll turned a hundred times and the top roll only turned eighty times. There is not a mill anywhere, even one equipped with the very finest anti-friction rolls, where top and bottom rolls turn exactly the same number of times.

What's this doing? How important is it? Our answer is that if it is consistent, if it is constant within a range, there is no harm being done.

Spinners set their frames accordingly. They know it is happening and so allow for it in speeds, gear changes, etc. There is an error, but it's constant. It's the changing error—one day the slippage is 10%, and the next day it's 5%, and the next day it's 3%, and then it's back to 8%—that is damaging, because this is one way uneven yarn is made.

Method of Studying Slippage. You might be interested in how we studied this slippage. We studied it with a photoelectric light. We didn't touch the top roll in any way because, if we did, it would probably increase the slippage.

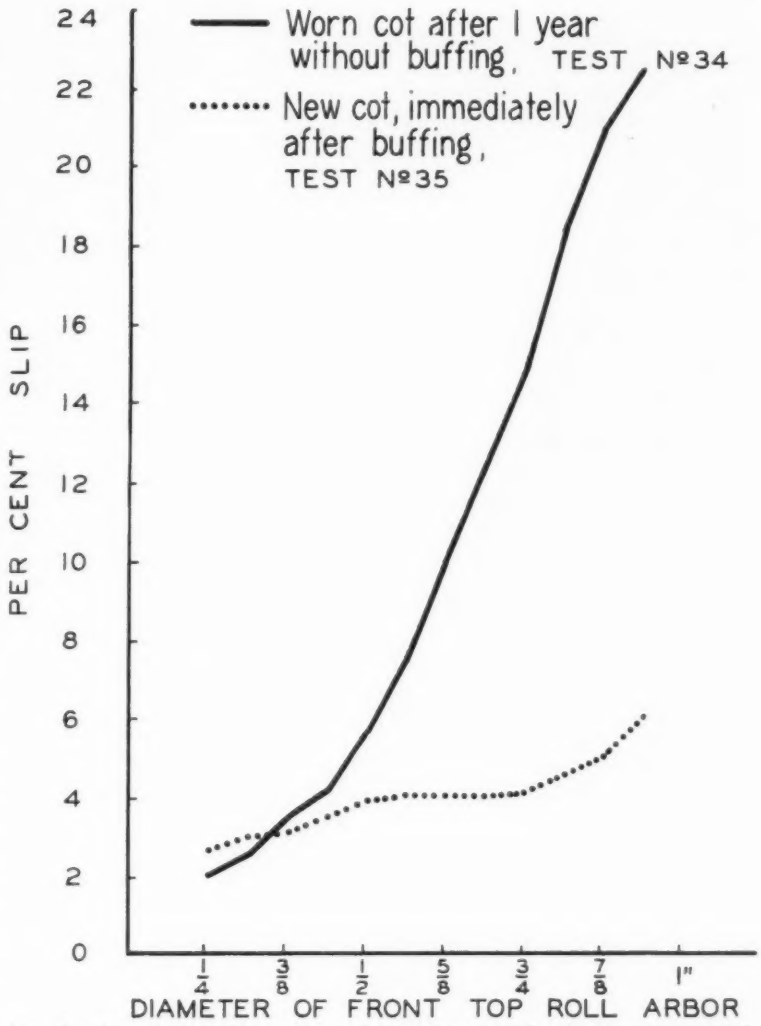
We had an ordinary counter on the bottom steel roll. A little lump was placed on the central arbor of the bottom steel roll, and every time the lump came around, it hit a counter and recorded one revolution. On the top roll, we counted by light. Every time a white patch came around on the top roll, it would actuate the photoelectric cell and record a revolution.

First we tried to get the cots so they were dark and white. We could get our counts, but we were using a cot that wasn't standard. We then went to the arbor of the top roll.

We put a reflective glass bead strip on it, and every time the little strip came around, it reflected back into the photoelectric cell and recorded a revolution. Frequently, we ran twenty-four hour tests, and at other times the test was for a shorter period. We usually tested 100 revolutions and took 10 tests at different times during the day.

Saddle Drag. It is obvious that a top roll saddle is, at best, a brake on the roll. It is acting just like the brake on your car. One of our jobs was to make this saddle as inefficient as possible, as poor a brake as possible.

If you had a car wheel spinning slowly in front of you, and you were to grab that wheel to stop it as quickly as you could, would you grab out at the tire or would you try to hold right at the hub? Obviously, of course, you would



Note that the worn cot in this graph showed great slippage as the arbor diameter exceeded 3/8". The studies also disclosed plain cots slip more than those containing cork, etc.

grab the tire.

If you grabbed at the hub, you would have trouble stopping it. It would slip through your hands, and you wouldn't stop it as fast as would the person who put a hand on the tire.

This simple fact we applied to top rolls, and we proved it correct with our slippage tester. We used a top roll with a removable arbor.

We started with a central arbor of 1", the same size as the cot, and we went from 1" all the way down to ¼", in ¼" increments. We were able to show a straight-line relationship. The smaller the central arbor on the roll, the less slippage occurs.

Why has everybody had a 9/16" or ½" arbor on top rolls? This was, perhaps, because originally top rolls were made of cast iron, and you needed perhaps 9/16" of cast iron for strength, so if they were dropped on the floor, they wouldn't crack. If a cast iron roll arbor is turned down to ⅜" and dropped on the floor, it will snap.

All our rolls have a ⅜" or smaller diameter arbor, as these hardened steel rolls don't deflect any more than the old 9/16" diameter arbor cast iron rolls deflected. The smaller you get that central arbor, the less slippage there will be between top and bottom rolls. If we could make an arbor the size of a common pin, slippage would be near the vanishing point.

Cot Condition and Type Important. This isn't the only thing that's affecting the slippage on the top roll. The condition and type of cot make a tremendous difference. We made similar tests, using a worn cot, a cot that had been used for a year without buffing, versus a cot that was brand new and had just been buffed.

We varied the central arbor diameter from 1" down to ¼". The new cot had a slippage of about 6% with the 1" central arbor and about 2% with a ¼" central arbor. The worn cot had roughly the same slippage with the small arbor, but it had a 22% slip with the 1" arbor.

The slippage went up very rapidly as the arbor size went up. This would immediately indicate something rather important.

Static, increasing with roll slippage, has top limit that causes lapping when exceeded. It can be drawn off.

The roll with the smaller diameter central arbor has less slippage problems regardless of cot differences. As a matter of fact, this line crosses exactly at ⅜"—our top roll arbor size.

At ⅜" both cots, the old cot and the new cot, had the same slippage, but from that point forward, they differed widely. For instance, when you use the standard arbor of ½", the new cot has about a 4% slippage and the old cot has a 6% slippage.

We made tests on different types of cots. Unloaded cots are not as good slippage-wise as are cots loaded with cork, etc. In our installations, we discourage mills from using hard or unloaded cots on back rolls. We recommend a type of cot with a higher frictional surface.

Static. After friction, we studied static. What's the relationship between slippage and static; conversely, what's the relationship between static and the size of the central arbor on the top roll? We found, although it wasn't a smooth curve by any means, that as the slippage went up, the static went up.

We had a volt meter and measured the number of volts in the cot. With a ¼" central arbor and about a 3% slippage, there were roughly 20 volts of static. As you go up to a ½" arbor, there is a little over 4% slippage and about 40 volts of static.

When you use a 1" central arbor, which is hypothetical to prove the case, you have about a 7% slippage and 80 volts of static. With a worn cot, one that had not been buffed, this static went up proportionally with the slippage.

With a 1" central arbor, there was roughly a 22% slip and there were 220 volts of static in the cot.

Conductive cots and metal parts that are well and firmly grounded to one another bleed off static charges. One of the things we wanted to know was how low does the static charge have to be so an end won't lap up. This is one reason why we want to eliminate static.

We can make a saddle and top roll conductive, but we wanted to know how conductive they had to be. We found that if there were more than 12 ohms resistance in the top roll, the static wouldn't bleed off fast enough and you would have lap-ups.

If there is less than 12 ohms resistance, you do not get lap-ups. A frame can operate normally with 15 ohms resistance in the top roll, but by the time there is 20 ohms resistance, it is not possible to run the frame. This static information is important, and we use it when designing new drafting elements.

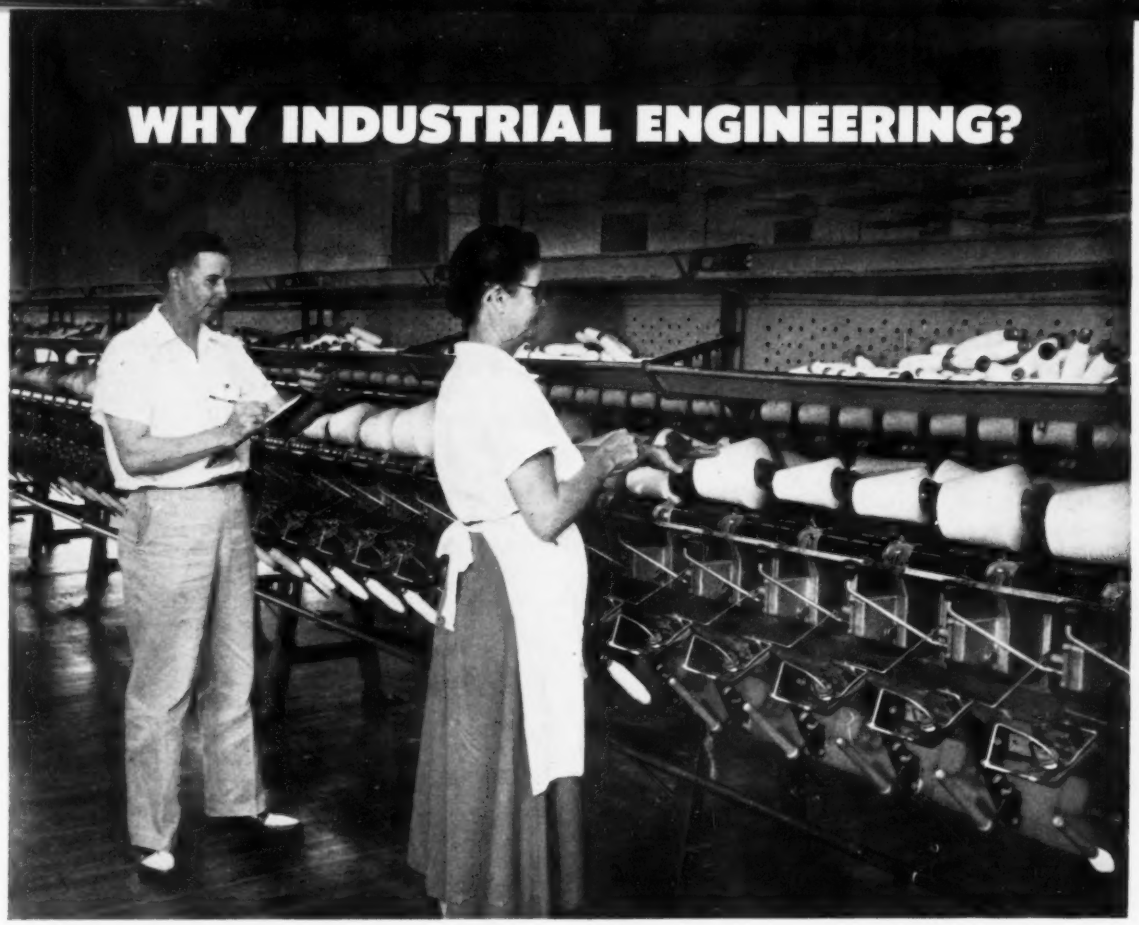
There is a top roll saddle on the market that tries to eliminate static by dragging a little metal piece on the back of the roll arbor. This works well if the metal has good rubbing contact, but as soon as the metal gets some lint on it, or for some reason doesn't contact properly, the resistance goes up. We found that that particular device, as long as it was operating correctly, had about 5 ohms resistance.

We also looked into the effect of top roll clearers and static. Flat clearers cause more static than revolving clearers. This makes sense now that we know slippage creates static.

Roll Setting. There are, in a drafting unit, various forces taking place—frictional forces and forces due to the pull of the stirrup. We have made an interesting study of this. These forces are of particular interest with the new cap-bar-less type of drafting. We are also studying roll settings.

For instance, it's common to set the front top roll 1/32" or 1/16" in front of the bottom steel front roll. We see no reason for this with

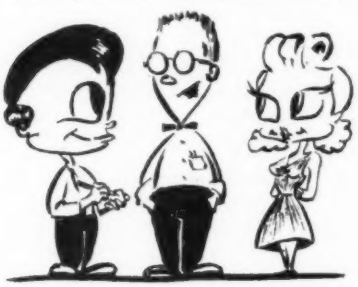
(Continued on page 137)



That's a GOOD question

for any textile mill operative to ask, and he's entitled to a GOOD answer

● *Here is a most unusual approach to the personnel relations problem of "selling" employees on the importance of time studies and other techniques utilized in work measurement. Frank Sherrill of Joanna Cotton Mills Co., prepared for the mill's employee publication the accompanying dialogue in which two mythical reporters, Joe and Anna, cornered the plant industrial engineer for an experienced answer to this question. Other mills should find the method useful. — The Editors.*



Exclusive

Joe: Just what is this Industrial Engineering anyway?

Engineer: Well, Joe, it's just an organized approach to measuring the work in any job, and also the use of common sense in finding better ways of doing our jobs.

Joe: I don't see why you want to measure our work.

Engineer: There are many good reasons, Joe, but I'll just mention a couple. In the first place, remember that management and the stockholders of our company are "buying" your time when you work. And, just as you would not buy a suit of clothes without first being measured, management, too, must be certain that its jobs are not too big or too small. Also, measurement of work is the only fair way to compare different jobs, so that everyone has his share—no more and no less.

Anna: I wish you would measure our work some other way. I don't like people looking over **my** shoulder!

Engineer: Anna, there just **isn't** any other way. Many people have tried other methods and, while some of these methods help, no way has yet been found which gives such a fair and complete picture as personal observation with a stopwatch.

Joe: You say that with these meas-

Watch for your copy of TI's ANNUAL PRODUCT PARADE AND BUYER'S GUIDE about November 20

ured jobs, or whatever you call them, everybody will have the same amount of work. Then why don't we all earn the same amount of money?

Engineer: Because, Joe, some jobs require more skill than others, and although two jobs might require the same amount of time to complete, one may require much more training and skill. Also, of course, many measured jobs are piece-rate or incentive jobs, so that more individual effort will earn more money.

Anna: I can see how you could measure a job, but we have so many style and yarn - count changes that it looks to me that these jobs would be "unmeasured" in a short time.

Engineer: Actually, Anna, the jobs are studied or checked in such a way that this can be taken care of, so that when changes occur we can adjust the rate accordingly. We also have frequent checks to be certain that our standards are correct.

Joe: Well, it **sounds** all right, but I have noticed that sometimes these checkers study a job and then no change is made, even though the check shows the job to be running above standard. That doesn't seem fair.

Engineer: Joe, you have put your finger on one of our biggest problems. All measured jobs are set up on the **average** conditions shown by the checks. The trouble is, it takes so long to get enough checks to be sure that this average is correct, that sometimes the trouble clears up before a change can be made.

Also, your supervisors always try to control these troubles with things like more twist in the spinning, heavying on roving, and so forth. It takes time to find out whether these changes will work. As far as being **fair,** our records show that, **on the average,** there are just as many times over, say a year's time, when the jobs are under standard as over standard. These periods are generally so short that no change is made for either condition.

Joe: But why don't you just make all these jobs small enough so that we could handle these troubles ourselves? Then you wouldn't need all this checking and changing.

Engineer: Because this would not let us offer our cloth at a low enough price to be competitive. Since other mills also measure jobs, they would then sell cloth cheaper than we. To put it another way, we could no longer meet our competition, and would soon go out of business.

Anna: Do you mean that these measured jobs actually help keep our mill running?

Engineer: Yes, Anna. It is safe to say that without measured jobs of any kind, our costs would be so high in relation to other mills that we would either have to close or, at least, very seriously curtail.

Joe: Well, that sort of puts a different light on things, but I still have another question. Don't these measured jobs hurt our quality?

Engineer: All measured jobs have quality allowances built into the rate. These allowances are agreed on by our supervisors, management, and our laboratory experts as being ample to keep up our quality. It is up to each of us to see that we don't use measured jobs as an excuse for "cutting corners" which might affect our quality.

Anna: Is there anything we can do to help ourselves and our company in this?

Engineer: Yes, there are a number of things, and I'll be glad to list them:

1. Don't hesitate to report to your supervisor any machine or condition which is not working properly.

2. Don't hesitate to ask for a check if you believe conditions on your job are above standard.

3. Don't hesitate to **ask** about any part of your job which you don't understand.

4. Don't be too impatient if **your** job is not checked immediately. After all, there are more than 6,000 machines in our plant, and over 750 people on measured jobs. Sometimes, when the work is running above standard in **one** part of the mill, it is above standard in **most** parts, and it is simply not possible to check everything at once.

5. Don't forget that everybody in our company is dependent on everybody else, and that it will take all of our skills, including Industrial Engineering, to survive poor market conditions.

Joe: Thanks for telling us all this. It's helped a lot.

Engineer: You're quite welcome.

Joe: See? I told you he'd explain it.

Anna: He surely did. I guess it pays to ask questions, huh?

Henry A. Truslow, president of Ponemah Mills, Taftville, Conn., who was re-elected president of Northern Textile Association, told members that unless solutions were found within the industry for the problems of overproduction and depression, the textile industry faces greater governmental control.

Industry faces more government control

Truslow told Northern Textile Association members

Staff report

AIDED by governmental policies, a growing foreign competition together with increased domestic productivity poses a serious threat to an industry that is faced with declining consumption, and is still beset by recurring periods of depression. These were among the most important factors to come under discussion at the Northern Textile Association's 104th annual meeting at Wentworth-by-the-Sea, N. H.

In his statement as the Association's president, Henry A. Truslow, pointed to the growth of textile output in under-developed countries. Aided by governmental foreign trade policies, he said, these nations are producing textiles at far below our costs to compete effectively in world markets.

"It is odd indeed to think of a Government which will defend the Walsh-Healy Act with one hand, and buy the product of these foreign subsidized mills with the other," he declared.

That the industry's problems are gaining recognition, however, was evidenced, Mr. Truslow said, by the establishment of a special Senate Subcommittee, which has been studying the industry's problems in great detail with particular emphasis on the relationship of Federal policies to the industry's welfare. Mr. Truslow made several observations regarding the Subcommittee's hearings held thus far, which are to be completed by the end of January:

First, as a result of Government policies, we will continue to face serious problems with foreign mills, both in our export markets and in our domestic markets.

"Whether we like it or not, our industry is in part at least, a weapon used by your Government in foreign diplomacy," he said.

Second, we have to recognize that in the two branches of our industry, which produce 81.2% of the total yardage of fabrics our Government controls both the supply and price of the cotton and wool which are used. However, Mr. Truslow cited the Farm Bill, adopted this year, as a progressive step toward more competitive fibers and to a recognition of the fact that subsidies for fiber producers must not be a burden to the manufacturers.

Third, that although some progress has been made in controlling recurring cycles of prosperity and depression, no method has been found of alleviating the severity of the recessions. And unless a solution is found to this problem, the industry would become a liability to the nation and eventually face greater control by the Government.

IN PRESENTING a report of the Association's Wool Manufacturers Council, Edward J. Russell, this year's chairman, and vice-president of Troy Blanket Mills, presented encouraging statistics on New England's woolen and worsted industry, pointing to an estimated 175 mills which produce over 130 million yards, or 47% of the nation's wool fabrics, and employ about 29,000. While some liquidations continued, he said, some mills expanded facilities, and the year's second quarter showed an increase in weekly hours averaging 10% above the first quarter.

The Council's most important activities during the year included opposition to truck rate increases on wool fabrics, resulting in drastic reduction of the original proposals; and in matters of foreign imports, Mr. Russell stated that the Council has urged continued application of the Wool Tarriff Quota and limitations on imports on the basis of categories of fabrics.

SENATOR John O. Pastore (D., R. I.), chairman of the Special Senate Subcommittee conducting investigation of the textile industry, contrasted the decline of employment in the industry, which fell by 25% in the 1947-1957 period, with only a small decrease in production of linear broad woven goods over the same period. While increased productivity, through technical progress, has partially contributed to this decline in employment, the Senator pointed out that some of the industry's problems stem directly or indirectly from certain governmental policies, or from the way in which they are administered.

This has been recognized, he said, by members of Congress, and resulted in the acceptance of a

resolution on May 6th, which called for a full and complete study not only of all factors affecting commerce and production in the textile industry of the United States, but for an examination as well of the extent and causes of the declining production and employment, and the effects of governmental policies and programs on the industry.

Toward this end the Subcommittee has been holding hearings throughout the industry and will present a report of its findings, including recommendations for any remedial action which it is proper for Congress to take. The hearings have brought out a number of factors, underlying the domestic textile industry's depressed conditions, the Senator stated.

A world over-capacity in textiles, he said, is much in evidence in which under-developed countries, aided by our foreign aid programs, are playing a contributing role because of their lower costs of production. The result of this has been increased importation of textile products into this country with curtailment of our own exports.

Another governmental policy contributing to the industry's reduced production is the two-price system for the sale of American cotton, offering foreign buyers a price advantage over domestic producers ranging from 20 to 25%. To add to these conditions is a declining per capita consumption of textile products.

The over-all effect on the industry of this increasing competition from abroad has caused a downward pressure on prices, the Senator pointed out, and a consequent decline in profit rates which in turn have caused a decline in capital spending.

In concluding his address, Senator Pastore stated that members of the Textile Subcommittee cannot promise to solve the problems of the industry. He said that " . . . we must recognize that there are certain governmental policies which will not be reversed in view of the present world situation, and of our prospective relations with other nations" in the future.

But he stated that governmental programs which encourage the growth of under-developed countries "can be administered in such a way that the burden will be more evenly distributed than it has been up to now. It is possible that through more careful planning we can protect the weak segments of domestic industry while encouraging a greater amount of international trade in those sectors where we need to encourage an expansion of production."

Aims of new wool promotion group

■ THE AIMS and purposes of Woolens and Worsteds of America, Inc., the non-profit organization recently formed to further the interests of American-made wool textile products (see TI for Oct., 1958, p. 170), as adopted at a recent meeting held at the Harvard Club in New York City are:

1. To encourage and increase the use and consumption of American-made woolen and worsted products through informational, advertising, and promotional programs and all other lawful and appropriate ways.

2. To promote the interests of American wool producers and American manufacturers of woolen and worsted fabrics by cultivating consumer approval and acceptance of American-made woolen and worsted products, through cooperative programs with all persons interested in developing and publicizing information, and to stimulate and expand the consumption of American-made woolen and worsted products.

3. To do all things which will foster good relations in the American wool industry and between the American wool industry and consumers, retailers, designers, and textile manufacturers, and all other persons concerned with or interested in the use of woolen and worsted products.

4. To gather from its members, and to disseminate in lawful and appropriate ways, information relevant to the American wool industry.

5. To acquire by grant, gift, purchase, devise or bequest, and to hold and dispose of such property as the purposes of this Corporation shall require, for the benefit of its members and not for pecuniary profit, subject to such limitations as may be prescribed by law.

6. To do anything and everything necessary which is lawful, suitable, useful or proper for the accomplishment of any of the above purposes or objectives.

G. Norman Winder (second from left) of Denver, Colo., newly elected president of Woolens and Worsteds of America, Inc., explains the significant points of the group's official seal to fellow officers. He is also president of the American Sheep Producers Council. Other officers are, left to right: George A. Ott of Richard Ott & Sons, Boston, Mass., vice-president; William I. Kent of Kent Manufacturing Co., Clifton Heights, Pa., vice-president; Ronald A. Mitchell, Cyril Johnson Woolen Co., Stafford Springs, Conn., vice-president; and Walter Pfluger, Eden, Texas, treasurer. Not shown are I. A. Wyner of I. A. Wyner & Co., Inc., New York City, vice-president, and Robert S. Taplinger of New York City, secretary.

THE GOAL OF QUALITY CONTROL...

NO SECONDS

"...We have rated our quality, we have found out where the poor quality is coming from, and we have taken steps to correct it. However, the ideal situation is not to have this poor quality to start with. How are we to prevent these things. . .?"

by George Malone

Assistant superintendent
Exposition Cotton Mills Co.

TO SET up a control on quality in the weave room and cloth room, the first thing you need to know is where you stand or "How good am I?" We need some method of grading quality so that we can evaluate the quality we are now producing and get a comparison to know whether we are gaining or losing ground.

In earlier processes it is usually quite easy to assign some numerical value to quality from various types of test equipment; but when it comes to assigning a numerical value to cloth quality, this is not so easy.

Numerical Rating System. One way that a numerical rating can be used is to establish a point system of grading whereby minor defects are counted as one point and major defects more points—some systems use 2, some systems 4. Then a certain quantity of cloth that has finished all normal burling and grading processes is examined very carefully, a list being made of all major and minor defects.

These are assigned the numerical values and these reduced to points per 100 yards. This is a very good system and can be quite useful, especially in mills or groups of mills running a few styles only or running styles of pro rata or similar constructions.

However, for a mill that runs a wide variety of styles and constructions of different fabrics this becomes quite cumbersome, and to get a report of any value can cost more than it is worth. In some cases one or two major fabrics can be selected and used for this checking.

In groups of mills this is frequently done by some central grading laboratory, and fabrics of the same type running in different mills are rated and compared. This same type report can be made, or defects can be summarized separately, to give a comparison of gouts, mispicks, etc., per 100 yards as well as an over-all rating.

If it is not feasible to assign a numerical grade to the cloth, then other methods must be used (Fig. 1). To insure that an established quality standard is maintained by the graders in the cloth room, some system can be established by which in some cases head graders (in almost all cases, supervisors) pull back cloth that has been readied for shipment and re-grade this cloth.

Both firsts and seconds should be rechecked to see that the first quality cloth is not below standard or that the second quality cloth is not above standard. This re-grading and checking should normally be done as a standard operation by cloth room personnel and as necessary by mill management.

If the grading is maintained to give a consistent quality, then reports of seconds made are accurate indications of the quality being produced by the weave room. Reports can be made, breaking seconds down as to type defects causing the seconds, to show the major causes of poor quality.

However, this is somewhat difficult in that so frequently many different types of defects contribute toward putting a single

Figure 1. Cloth room grading report that classifies defects either as major or minor.

STYLE 1796
SAMPLE
CONSTR. 54" 76x52
TYPE FAB. BROKEN TWILL
BALE OR ROLL NO. 15492
YARDS 446
CLASS 3rds
DEFECTS PER 100 YDS. 15.5

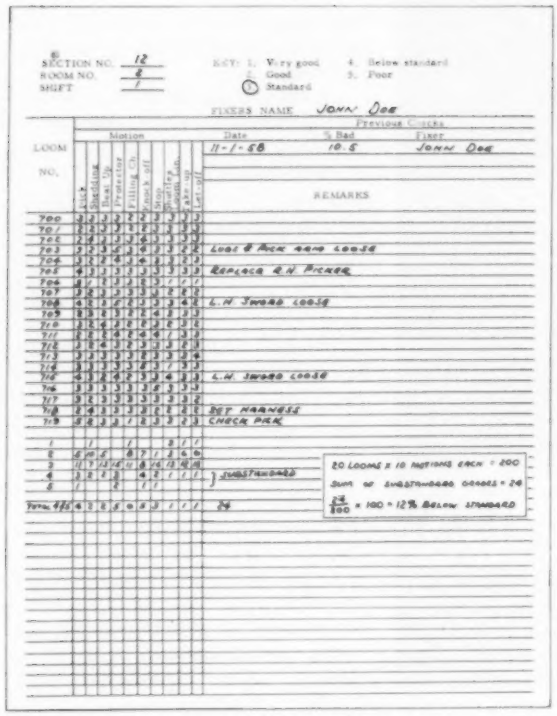
EXPOSITION COTTON MILLS
GRADING REPORT
DATE 10-1-58

OVER ALL GRADE Good
WARP Good
FILLING Good

LOOM NO.	WIDTH	YDS.	ST. PER	FOLD CHECK NO.	LT.	MISPICKS	BROKEN PICKS	THICK PLACES	THIN PLACES	UNEVEN FILLING	RUBBERS	COARSE PICKS	PICKS BROKEN BY INSPECTION	SLUBS	BIG ENDS	CLEANING PLACES OILY FILLING	ALL	TOTAL DEFECTS NO.	REMARKS	GRADE
	54⅜	79¾	52			1			2	2							5		Double end thru cut	3rds
	54⅛	60⅛	52				1	1		2							2			"
	54⅛	93	52						1		2		1				3	1		"
	54	69	52			1			1	2				1			4		Thin place on chain	"
	54	84	52														1			"
	54⅜	60	52					1			1						2		Actual yardage 62	"

REMARKS

CHECKED BY S. Hinby



SECTION NO. 12
ROOM NO. 8
SHIFT 1

KEY: 1. Very good 4. Below standard
2. Good 5. Poor
3. Standard

FIXERS NAME John Doe

LOOM NO.	Motion									Previous Cloths		
	Date									5 Bad	Fixer	
	Lick	Shedding	Beat Up	Protector	Filling Ch.	Knock off	Miscellaneous	Warp Stop Motion	Take-up	Let-off		
700	3	3	3	3	3	3	3	3	3	3	11-1-58	10.5	John Doe
701	3	3	3	3	3	3	3	3	3	3			
702	3	4	3	3	3	4	3	3	3	3			
703	3	3	3	3	4	3	3	3	4	3	Loose & pick 4&10 loose		
704	3	3	3	4	3	3	3	3	3	3			
705	4	3	3	3	3	3	3	3	3	3	Replace R.H. Picker		
706	4	3	3	3	3	3	3	3	3	3			
707	3	3	3	3	3	3	3	3	3	3			
708	4	3	3	3	3	3	3	3	3	3	L.H. Inward loose		
709	3	3	3	3	3	4	3	3	3	3			
710	3	3	4	3	3	3	3	3	3	3			
711	3	3	3	3	3	4	3	3	3	3			
712	3	3	3	3	3	3	3	3	3	3			
713	3	3	3	3	3	3	3	3	3	3			
714	3	3	3	3	3	3	3	3	3	3			
715	4	3	4	3	3	3	4	3	3	3	L.H. Inward loose		
716	3	3	3	3	3	3	4	3	3	3			
717	3	3	3	3	3	3	3	3	3	3			
718	3	4	3	3	3	3	3	3	3	3	Set harness		
719	3	3	3	3	1	3	3	3	3	3	Check pick		
1		1		1			5	1	1				
2	1	1	1	1			1	1	1				
3	1	1	1	1	1	1	1	1	1				
4	3	3	3			4	3	1	1	1	Substandard		
5	1		3			1	1						
Total 4/5	4	3	3	5	0	3	3	1	1	1	24		

20 looms x 10 motions each = 200
Sum of substandard ratings = 24
$\frac{24}{200} \times 100 = 12\%$ Below standard

Figure 2. The loom grading sheet is filled in by the supervisor making the loom inspection. The grading key is at top of form.

SUMMARY WEAVING OPERATION STUDY

MILL NO. 2 DATE 10-1-58

STYLE NO.	1934	
Total Picks Run	543,000	
Capacity Picks	581,280	
Efficiency	93.41	
Looms Hrs. Studied	54	
Looms Studied	9	
Looms Hrs. Producing	52.31	

WARP STOPS	No.	Stops per Loom Hr.
Knots Yarn	3	.06
Kinks	1	.02
Knots		
Slubs		
Crossed Warps		
Ends Behind Drop Wires		
Loose Ends		
Drawn or Wild End	1	02
Selvage Ends		
Total Warp Stops	5	
Stops Per Loom Hour	.10	.10

FILLING STOPS	No.	%
Breaks While Running	5	.10
Breaks at Change	8	.15
Filling Run Out	1	.02
Cloth Dirty		
Bad Filling		
Bad Quality		
Out of Filling		
Break on Bunch	1	.02
Total Filling Stops	15	
Stops Per Loom Hour	.29	.29

MECHANICAL STOPS	No.	%
Stop Dirty	1	.02
Clean Dirty	3	.06
Mech. Run Outs		
Stop at Change		
Sweep		
Pick Out		
Total Mech. Stops	4	
Stops Per Loom Hr.	.08	.08
Grand Total Stops	24	
Total Stops Per Loom Hr.	.46	.46

Out of Fix Analysis

Loom Number	No. Stops	No. Flags	Reasons for Flags
843	2	1	Skein off
835	1	1	Bad temple
836	1	1	Stop motion
843	1	1	Skein off
846	1	1	R.H. Temple
835	1	1	Broken pick

LOST TIME SUMMARY

Min. Lost — Out of Fix	6 @ 65
Min. Lost — Warp Outs	
Min. Lost — Pick Outs	
Min. Lost — Cleaning	
Min. Lost — Doff Cloth	
Total Lost Minutes	65
Percent Lost	2.94
Eff. Minus Lost Min.	93.35
Weaver Studied	Mary Roe
Loom Fixer	Joe Doakes
Type Loom	44X2
Loom Speed	173
Style Filling	25.00 AA
Observer	O.C.S.
Summary by	O.C.S.

Figure 3. One quality control yardstick, the loom stop study, offers check on weavers, fixers, and quality of loom operation.

piece of cloth into seconds. Seconds reports can be very useful when given in different ways.

For example: seconds by styles; by weavers; by fixers; by departments within the weave room; and by supervisors. The problem here is for each mill to decide which of these reports are the most useful and not to become incumbered with more reports than supervision can wade through and use to advantage. Usually reports showing the seconds by styles and by weavers will be sufficient.

Another method of grading quality—in this case not actually the quality of the fabric but the quality of loom maintenance—is to have a loom maintenance checker who checks a fixer's job in detail, listing all improper settings, parts that need replacing, and general condition of the section. This can be evaluated numerically by breaking the loom down into the major motions and rating each setting or parts in need of repair (Fig. 2).

Another check which to a certain extent reflects quality is the loom stop check. This gives a check on production, weavers, loom fixers and consequently quality of loom operation (Fig. 3).

A method which can not be overlooked and certainly can indicate the quality in loom maintenance is routine observation and checking by the supervision and management. Certainly a lot can be found out by walking through a weave room, examining looms, warps, shuttles, general operations, and by watching cloth going through the cloth room.

Mills ran a good many years with not much more quality control than this, and there still is no substitute for good supervision and management.

Trace Bad Work to Source. After you have rated quality, to have an effective program there must be some way to determine the responsibility for sub-standard quality. Who or what is responsible for these seconds or defects or in other words, "Who dunnit?" (Fig. 4).

Cloth being inspected and graded in the cloth room should be properly identified as to the operator so that when cloth is checked by supervision or some central grading operation, the poor grading or burling can be traced back to the one responsible.

A common and simple way to do this is for these people to write their names or initials on the tail ends of the cloth. If it is felt necessary to trace this back after a finishing operation, then the names must be written in some medium which will resist the dyeing.

Cloth coming from the weave room should be identified as to loom number, date, and shift so that poor quality can be traced back to the faulty loom, poor weaving, or fixing. It is quite helpful in determining which weaver is responsible for a cut of seconds to have the loom number and date marked at the selvage of the cloth once during each shift by the fixer or weaver and to mark the shift change with colored pencils.

Where a spare weaver runs looms, the dates are necessary if the cloth is to be identified specifically to a weaver. Of course some fabrics cannot be marked, so this matter is not quite so simple. Sometimes short colored strings can be woven in at the

selvage to identify the shift and later removed by the burler. Cloth doffers can also mark the tail of the cloth with the loom number and date.

One effective way to get quick action on a loom making poor quality cloth is for the cloth inspector to make out a defect ticket, as soon as the cloth is checked, for cloth that is second quality or cloth that indicates faulty loom operation for such things as jerk-ins or kinky filling.

At our mill we make these tickets and send them to the weave room every two hours to the foreman, who then takes them to the loom to have the loom fixed.

After you know how good your quality is and who or what is responsible for poor quality, then the next steps are ones of correction to improve quality.

The finest system of reporting in the world is no good unless the reports are followed through and steps taken to correct faulty operation. Defect tickets showing a loom out of fix, reports from loom stop checks, maintenance checks, weavers seconds, seconds by style, and reports on grading all require that supervision follow up to correct and improve the situation.

The supervision in the cloth room must talk to operatives, show them what they have done wrong, show them the right way, and check back to see that it is followed through. Supervision in the weave room must follow up all these reports in the same way to see that a loom which has been reported as out of fix is fixed correctly, to see that weavers making mispicks know how to start the loom properly without making a defect and then to see that they do so, that weavers inspect their looms, know how to look for defects and have them corrected.

Have you checked your weavers' eyes to see if they can see a misdraw? If you use color identifications for filling counts, have you checked your battery hands to see if they are color blind?

For weavers and fixers to see the defects that they have made will certainly impress them more than for them to be told that "your seconds were so-many yards or such and such a percentage."

EXPOSITION COTTON MILLS COMPANY
WEAVER'S DAILY SECONDS REPORT

ROOM NUMBER: DATE 10-1-58

SHIFT	EMPLOYEE NUMBER	WEAVER	LOOM NUMBER	TYPE LOOM	STYLE	YARDS	PICKS	DEFECTS
1	17842	Smith	191	44X2	1934	32		Bad Harness
2	19062	Jones				29		
3	10450	Brown				32		
2	19062	Jones	188	44X2	1934	22		Mispicks (6)
3	10450	Brown				18		Thin places (2)
1	14426	Smith	314	50X2	1957	67		Misdraw
2	17179	Jones				50		Thread out (2)
3	12622	Brown				49		Uneven

COPY TO—SUPT. OVERSEER WEAVING PAYROLL

Figure 4. A form of the type used to identify seconds with the weaver that produced them.

Incentives. The big problem of course is in getting weavers, fixers, graders, and other employees to do the job that should be done. There are three main incentives that serve this end. The first incentive is fear.

This can be fear of reprimand, fear of ridicule of fellow-workers or supervisor, or fear of dismissal.

Perhaps a little bit of this is present in all of our operations but we hope not to too great an extent. Sometimes as a last-resort measure a little fear can be useful. But on the other hand if carried to extreme you will not have a very happily run organization.

A second incentive is that of earnings. Some mills find this useful, others prefer not to use it. This can be in the form of a lower piece rate for second quality cloth or as a bonus for good quality.

A third incentive, the best incentive and the one that we all wish we could use to the exclusion of the others, is the incentive of pride—pride in one's job and in doing a good job, a desire for recognition or praise from supervisors or fellow-workers.

The extent to which this incentive is sufficient is dependent directly upon the ability of the foreman in dealing with his personnel —consistency, fairness, and helpfulness of foreman, overseer, and on up the line.

Pride can sometimes be stimulated by competition among the workers—by competition to be the best on the reports which can be posted in the mill, by competition to gain some award which management may offer for outstanding work.

We have rated our quality, we have found out where the poor quality is coming from, and we have taken steps to correct it; however, the ideal situation is not to have this poor quality to start with.

How are we to prevent these things from occurring in the first place rather than waiting to correct them later? We must plan ahead—that slogan which has become so familiar on the walls of our offices.

Employee Training. The first step in planning for good quality is a program of education and training.

Do your fixers know how to set looms by gauges or do they still knock them up? Does your weaver know how to match the pick in the goods he is running?

We are running one style of corduroy that repeats on nine picks. In three of the picks the shuttle passes in the same direction and all weave exactly alike. This is weaving on a dobby loom so the weavers can match the picks by turning the head back, but it requires special instruction.

Another style of corduroy, with an eight-pick repeat weaving on a cam loom has two picks exactly alike with the shuttle passing from left to right and two alike with the shuttle passing from right to left.

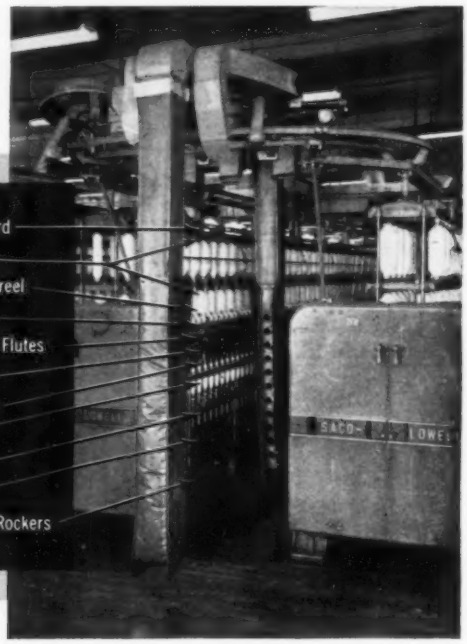
If the weaver simply turns the loom over until she gets to an open

AMERICAN MONORAIL

CLEANS ALL POINTS!

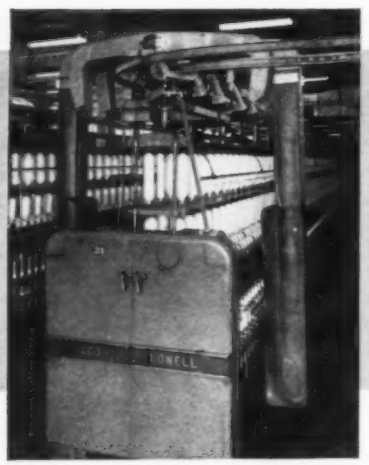
with combination upper frame and under frame cleaning unit

special air outlets are cut in the cleaner boots at the time of installation to insure proper cleaning of all parts of the spinning frame



CLEANS BEST BECAUSE

1. Air reaches all parts of the frame including back guides, weights, idlers and samsons.
2. Necessary amount of air to clean any area can be delivered to that area.
3. Total amount of air is easily controlled by adjustable air intake.
4. Unit can be changed from closed loop operation to reversing type in minutes.
5. Four adjustable and directional creel cleaning outlets will clean all types of creels.
6. This unit cleans 20 or more frames efficiently.
7. Bolted track and standard curves make revised track layout easy.
8. Ceiling cleaning unit (over 1 horse power) will clean ceilings as far as 16 ft. away.
9. Cleaner has ample horse power to do an efficient job.



CLEANS SAFELY BECAUSE

1. All metal parts of cleaner are above head height.
2. This unit or any other American Mono-Rail unit cannot fall off the rail.
3. All boots completely flexible.
4. 50 volt—3 phase current carried in the rail. No fragile conductor bars or insulators.

MAINTENANCE FREE BECAUSE

1. All bearings are sealed.
2. Cleaner requires no lubrication.
3. Travel is stabilized.
4. Many parts are duplicates.
5. Most parts accessible for easy maintenance.

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OVERHEAD HANDLING EQUIPMENT

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pick which is a running pick, as we call it, with the shuttle going in the proper direction, and starts the loom up at this point she would have a mispick. This again requires very special instructions to the weaver in the proper way to identify the right pick.

Vocational classes for fixers and overhaulers are certainly an excellent way of training for proper fixing and use of gauges in setting up looms. Training classes for supervision also in many cases can do a great deal to help improve and maintain good quality.

We all need a refresher course once in a while to remind us of the things that we have forgotten or neglected, and to share ideas and gain from the experience of others.

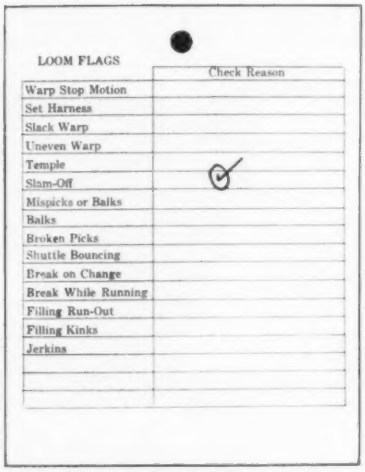
Maintenance System Necessary. To get a good consistent quality of product some system is needed for loom maintenance. You can operate a mill by having the fixers take down flags and check on looms making bad cloth but in the meantime they have made a lot of bad cloth.

Overhauling can be done in various ways and to various extents. Some mills have very specialized overhauling or fixing jobs in which one man's responsibility will be exclusively, for example, thread cutters or shuttles. This has distinct advantages in consistency and in having all thread-cutter settings exactly alike, all shuttles repaired alike and properly maintained.

Many mills use this specialized type of fixing to advantage. However, it also has a distinct disadvantage of the division of responsibility for the product of a loom.

Overhauling crews can be used to overhaul looms on a regular cycle. This has the same disadvantages of dividing responsibility.

There are many ways that the fixers' work can be done. We use on our looms a small card listing major reasons for flags with space to write in additional reasons (Fig. 5). When a weaver flags a loom, the reason for the flag is checked on the card, so that the loom fixer will not have to waste time trying to find out why or having to ask the weaver what is wrong with the loom.


LOOM FLAGS

	Check Reason
Warp Stop Motion	
Set Harness	
Slack Warp	
Uneven Warp	
Temple	
Slam-Off	
Mispicks or Balks	
Balks	
Broken Picks	
Shuttle Bouncing	
Break on Change	
Break While Running	
Filling Run-Out	
Filling Kinks	
Jerkins	

Figure 5. A card permitting weavers to enter reason for flag saves fixer time. The fixer repairing the loom circles the check made by weaver. Color code identifies stops by shifts. Excessive stops in any category are quickly seen.

Then, when the loom has been fixed, our fixers circle this check mark and the card remains on the loom. Each shift uses a different color pencil, so that over a period of a week a supervisor can tell how many times a loom has been flagged for each reason, and how many times each shift has worked on it to get a good indication of which fixers are not fixing.

At warp out is a good time for many items on a loom to be checked. We use a card with a check list including such items as sand roll, set harness, line and square reed, etc., which each fixer is required to do at each warp out (Fig. 6).

Another thing that requires special attention is the installation of a new shuttle. Here again a check list can be used to see that the loom is in shape for the shuttle and set up correctly.

Some schedule of checking and setting a loom with gauges is very helpful to maintain the looms in the proper setting to give good quality cloth. Here again a check list can be used.

We are having each fixer check one loom per day, resetting where necessary at all points requiring gauges, also checking for proper harness settings and timings, worn parts, etc. (Fig. 7).

We have our sections divided for each shift for these daily loom

WARP OUT

Room No. _____ Shift ____
Loom No. _____ Date _____

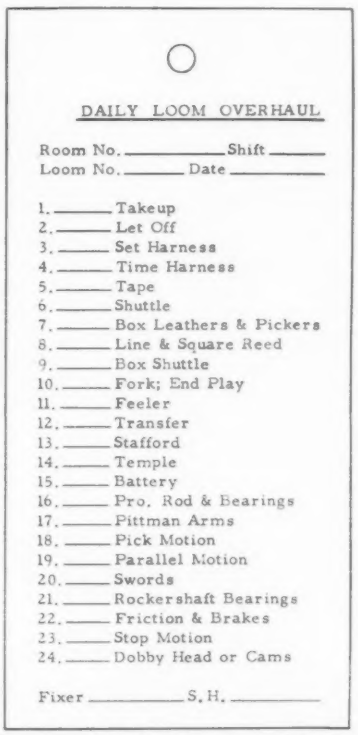
1. _____ Sand Roll
2. _____ Take up Gears
3. _____ Let Off
4. _____ Tighten Loom
5. _____ Cams
6. _____ Ck. Cleaning & Greasing
7. _____ Ck. Crossed Warp
8. _____ Harness, Sheaves, Cords
9. _____ Binding Heddles
10. _____ Drop-Wire Separator
11. _____ Harness Timing ____ in.
12. _____ Tape
13. _____ Reed Cap
14. _____ Beam Lock
15. _____ Vibrator Cam Set ____ in.

Fixer _____ S. H. _____

Time Out _____

Time Started _____

Figure 6. Many items on a loom can best be checked when warp is out, and this loom card serves as the fixer's memory.


DAILY LOOM OVERHAUL

Room No. _____ Shift _____
Loom No. _____ Date _____

1. _____ Takeup
2. _____ Let Off
3. _____ Set Harness
4. _____ Time Harness
5. _____ Tape
6. _____ Shuttle
7. _____ Box Leathers & Pickers
8. _____ Line & Square Reed
9. _____ Box Shuttle
10. _____ Fork; End Play
11. _____ Feeler
12. _____ Transfer
13. _____ Stafford
14. _____ Temple
15. _____ Battery
16. _____ Pro. Rod & Bearings
17. _____ Pittman Arms
18. _____ Pick Motion
19. _____ Parallel Motion
20. _____ Swords
21. _____ Rockershaft Bearings
22. _____ Friction & Brakes
23. _____ Stop Motion
24. _____ Dobby Head or Cams

Fixer _____ S. H. _____

Figure 7. A card of the type used by the fixer as he checks one loom daily and makes the necessary gauge settings.

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MAINTENANCE SCHEDULE FOR LOOM FIXERS

MONDAY

1. Check crank arms hsee that they are tight.
2. Check that filling slide is set properly in grate.
3. Check end play in lay & see that lay guides are on & set correctly.

TUESDAY

1. Check setting & timing of harness.
2. Check filling feelers, temple thread cutters & transfers.

WEDNESDAY

1. Check looms for slacking back.
2. Check pickers.
3. Check binders & bumpers.
4. Check box leathers.
5. Replace all worn parts.

THURSDAY

1. Dress & put shuttle dressing on shuttles.
2. Check shuttles for bad springs & see that proper weight of nylon is put in properly.

FRIDAY

1. Tighten swords & collars.
2. Check stafford thread cutter.
3. Check parallel plugs.

Figure 8. This schedule is used by the fixer as he checks specific motions on the looms assigned him for overhauling.

overhauls. This way a fixer can set up his third of the section, and when set properly, one a day, he can keep his looms in good running order, making his job much easier to run and avoiding a lot of unnecessary poor quality work. An alternate system to this is to schedule certain motions or settings and require that a fixer check all or a certain portion of his looms for a particular motion on the scheduled day (Fig. 8).

The problem here is to work out your own system incorporating some of these or other types of schedules. Certainly some scheduling of maintenance is needed, but the other extreme is no better and too much scheduled overhauling can leave no time for routine "fixing."

In the prevention of poor quality another time when special attention is required is when a new style is put on a loom. Here again some system should be set up for the checking and okaying of each loom as it is started up (Fig. 9).

Our standards department schedules these loom changes, makes out a red card which is hung on the loom to indicate that it will be changed at warp out or other time. Then the looms that are changed every day are checked, and a swatch is checked in the standards department to see that it has the proper weave, pick gear, no misdraws, etc. This is used as a double check against the department, as they are still responsible for the proper starting up of a new style.

Some system of inspection of the cloth on the loom is helpful in preventing seconds. Here again you can let a weaver start up looms and look at cloth as he pleases or you can have a schedule. Weavers should at least check all cloth as soon as possible after shift change to eliminate misdraws or other defects.

In some cases special inspectors can be helpful to look for cloth defects. Here again unless care is exercised you will have divided responsibility, and it is usually better if a defect is found that this loom be stopped off and reported, so that the weaver may correct the fault, and not just wait for an inspector to come along and take out all the misdraws that the weaver has just drawn in.

Does your mill make any seconds? Go back and find out how good your quality is. If you find a piece of seconds find out "Who dunnit?" Take those *steps to correction*, not forgetting though, which is the best incentive. Then *plan ahead* for better and better quality cloth.

STYLE CHANGE

CHANGE LOOM AT WARP OUT:

From 1857

To 1934

Date changed 10-1-58

Time stopped 8:00

Time started 10:00

Pick readings:

1st 78

2nd 74

3rd 76

Loom No. 256

Name JOHN DOE

Figure 9. The standards department hangs this red card on each loom scheduled for a style change, collects it as change is made, and checks sample from new style.

Spinning drafting

(from page 126)

cap-bar-less types of spinning. This is just causing additional wear on parts.

When the top rolls are set forward of the bottom rolls, there is an additional forward pushing on the top roll. If the top roll is directly on top of the steel roll, this doesn't occur.

The bottom roll is pushing upward and tending only to turn the top roll, rather than pushing it upward and forward. From the tests we've run to date, it appears that top rolls on cap-bar-less spinning should be set directly on center. It also helps alignment problems.

If a roll is set forward of center, and there is a lap-up on one side of the roll, the lap makes one cot bigger than the other and forces the roll out of alignment. If the front top roll is forward of the bottom roll, once it crosses over centers, one cot has dropped forward on one side of the center of the steel roll, and the other cot has dropped back of the center of the steel roll. This causes a severe misalignment.

If rolls are on centers, and a lap-up occurs on one side, the misalignment is slight. You don't have the additional forward forces working against alignment that you have when top rolls are set forward.

Sometimes a roll must be forward of a bottom steel roll. On some spinning frames for instance, the top middle roll is definitely forward of and lower than the bottom steel middle roll, so the yarn will have a longer path to travel.

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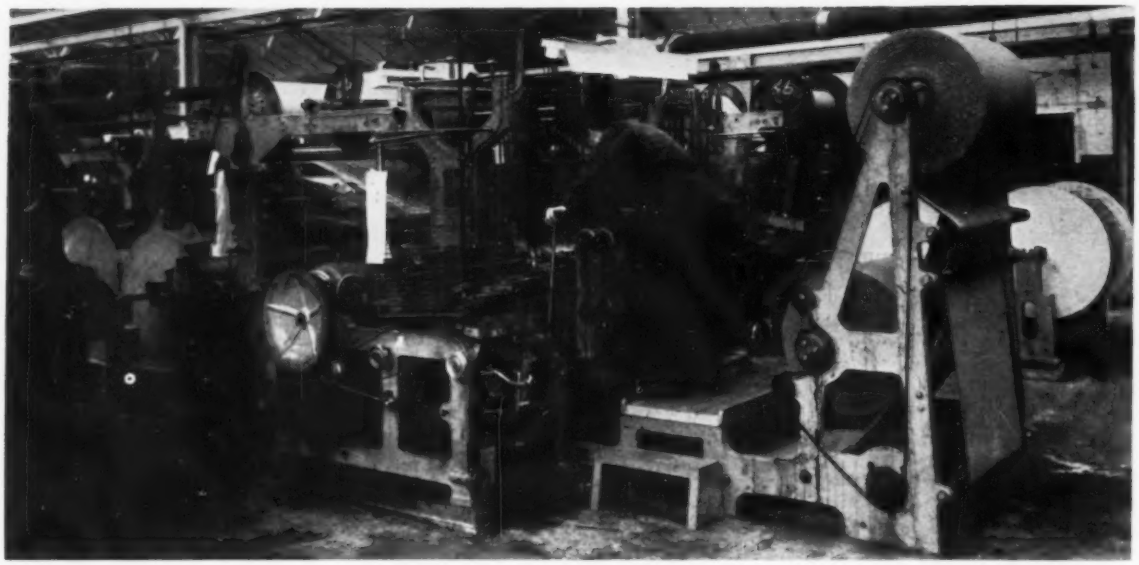

Face-to-face carpet output tripled

by A. Crossland
Exclusive

AFTER the protracted business of starting up their various carpet departments after the war, Carpet Trades Ltd., Kidderminster, England — who, with their companion firm John Crossley & Sons, Ltd., are the biggest people in carpets outside the United States—decided to install a small plant of ¾ face-to-face looms.

These looms—by Wilson & Longbottom Ltd.—represented a great advance in Wilton carpet machinery, and when they were erected about seven years ago there was great interest in their development. There were of course many "teething" troubles, extending over a fair period of time, during which close cooperation between loom maker and manufacturers was necessary.

But eventually they came up to expectations, and further looms in ¾, 4/4, and 16/4 widths were ordered and finally installed. A plant of face-to-face Jacquard looms came in at the same time, and these will be discussed later.

J. M. Grant, director and chief engineer, was responsible for their development. He has "pushed up" the loom speed without impairing its excellent balance, and output per weaver is nearly three times that of a weaver on an orthodox wire loom.

This comes at a time when the popularity of Wilton carpets is assured by contemporary furnishing tastes. Double-carpet weaving on the moquette style has had only limited success, and it is obvious that the customer generally wishes the true Wilton structure as shown in *Figure 1*.

The successful loom weaving two carpets together on the face-to-face principal must be able to cope with the various materials and weaves possible on the conventional pile wire loom. It should be able to use cotton, jute, hemp, bump, and so on, in close setts, and be strong enough to beat up the maximum number of pile rows per inch.

Of the wide range of plain Wiltons which Carpet Trades market the only ones excluded from the new looms are Brussels and three-shot specialties*. Both pile and backing materials are the same as used on wire looms.

The revolutionary results of these machines are due, curiously enough, not so much to revolutionary principles as to up-to-date engineering practice and the study of material stresses as will be shown in the following description of their working. There is the strength of metal needed to beat up two fillings together, and bearings, rollers, levers, studs, and so on, are more than adequate for the job.

Pile Yarn Cutting. See *Figure 2*. A circular knife cuts in both directions across the fabric, so that no "lay" of the pile is produced, neither can there be wire marks, burnings, and other faults associated with pile wires. The pile is at right angles to the foundation, and makes a very even top which requires little or no subsequent shearing.

Comparing this with pile cutting in a wire loom, it will be seen that

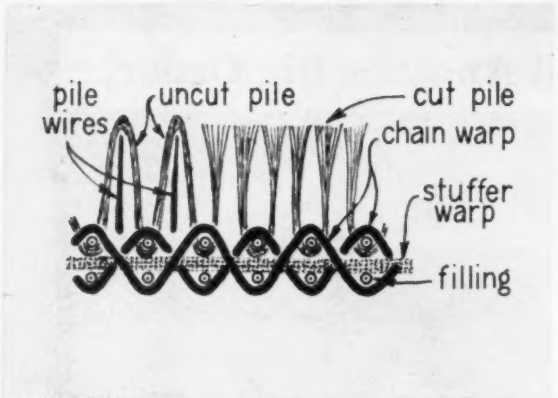

Figure 1. Plain Wilton two-shot weave showing how the pile wire knife does not necessarily cut across the yarn at a right angle.

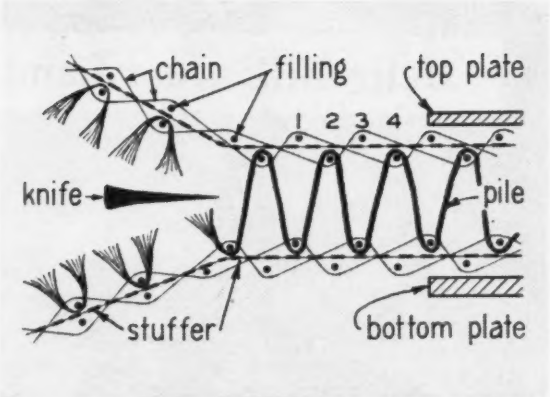

Figure 2. Distorted structure of two-shot, face-to-face plain Wilton shows arrangement of face and back picks in twin fabrics.

the ordinary pile wire knife does not necessarily cut at right angles through the pile yarn wrapped round it, a fault which has to be remedied in the finishing room by cropping. See *Figure 1.*

The two-shot weave is employed for the plain loom, and at the point of beat-up the face picks of both top and bottom carpets are brought directly over the back picks in the accepted structure as in *Figure 1.* In *Figure 2,* however, the position of the filling is distorted in order to demonstrate the placing of the top and bottom shots together in the fabric.

The double carpet is shown weaving from right to left, and a repeat of the weave is shown, with the simultaneous face and back shots numbered 1, 2, 3, 4. The positions of the warp sheds may be followed in *Figure 3.* After leaving the fell of the cloth the pile yarn joins both carpets together until it reaches the cutting point where the knife moves rapidly across the loom midway between the carpets.

The knife carrier runs in a grooved cast iron channel stretching across the loom between the carpets. Automatic knife sharpening takes place against two hones at one end of the loom. The edge cuts the full width twice, and then is turned a little by means of a ratchet which pushes against a sloping lever at one end of the grooved channel. Each two crossings sees a new edge presented to the pile yarn.

There is an epicyclic motion for driving the knife. Cords are threaded around fixed and movable grooved pulleys, giving a rapid and easy motion to the crossing knife. The cords can be seen in the illustrations to be directed by fixed pulleys at each end of the loom to the main fixed and movable pulleys and to the points where the cords are held.

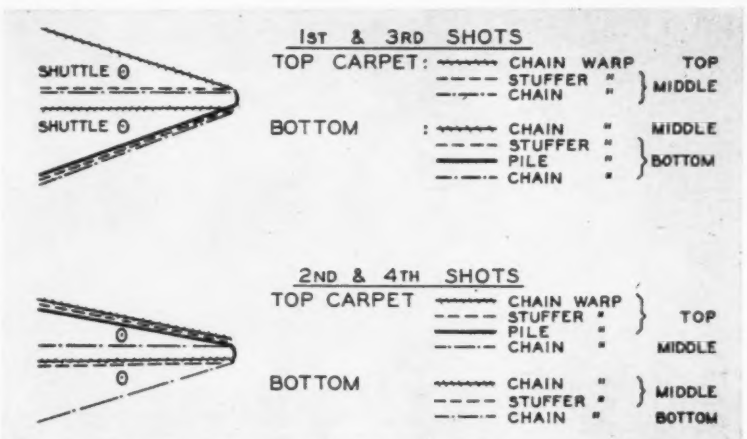

Figure 3. The four warp positions in double-face plain Wilton weave. Chain warp shed changes after the second and fourth picks. Pile warp, when cut, forms carpet faces.

The movable pulleys rotate on a lever, the fulcrum of which is at the end of an arm driven by the bottom shaft. A chain connected to a sprocket wheel fixed on the driving shaft rotates the lever, and the action of the chain is to move the middle series of pulleys in a line so as to lengthen one cord and shorten the other.

Because the traverse of the carrier is much longer than the width of the carpet, the speed of the knife is assured at the start of the cutting, and there is no fear of cutting taking place during the beat-up. A stop-motion is incorporated where one pulley presses against a spring, release of which due to a breaking cord would cause the loom to knock off. See *Figures 4 and 5.*

Let-Off Motions—Pile Warp. A simple but ingenious let-off motion for the pile warp is illustrated in *Figure 6.* This ensures correct take-up of pile into the carpet and could profitably be introduced into all plain looms where the problem of over-usage of pile yarn is ever-present.

The warp on leaving the beam (with its 36″ flanges) is led through an open-topped reed, then between a four-inch emery-covered roller and two felt-covered nip rollers. In the early stages of development the emery roller was too weak, with the consequence

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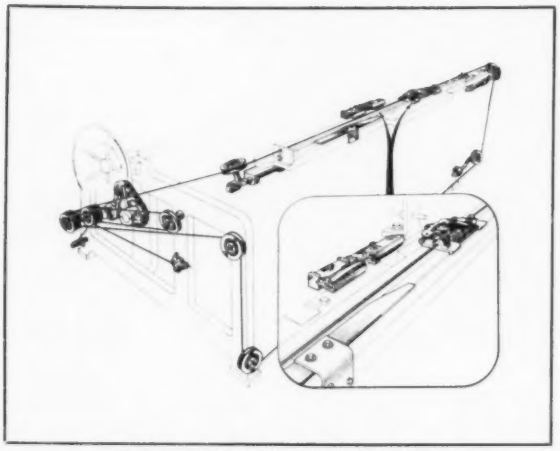


Figures 4 and 5 (insert). Knife motion

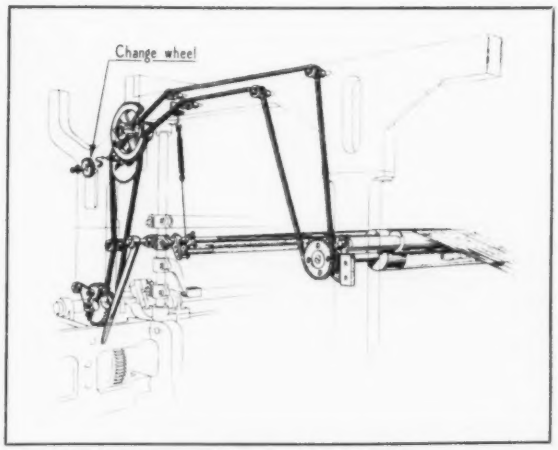


Figure 6. Pile warp let-off motion

that the pile yarn slipped forward in places to make uneven cutting. A heavier and rigid roller was substituted with lasting benefit.

The speed of delivery from the let-off rollers—through which the warp cannot now slip—determines the height of the pile. Increased speed means higher pile. The emery-covered roller connects by two chains to the crankshaft through gear wheels where the change wheel is in a prominent position.

The yarn is now led over a double-bar jumbo in the usual oscillatory motion which compensates for the rise and fall of the heddles. A lever on the jumbo works against a bowl on the crankshaft (see *Figure 6*), and during the oscillation springs at each end take up the slack as the warp shed closes. Reference to *Figure 2* will show top and bottom metal plates, over the top carpet and under the bottom carpet, which join with the let-off motion in regulating the height of pile. The tendency of the carpets to pull apart in the reed—caused by the high and low positions of the stuffer and chain beams behind the loom—is checked by these plates. If the top one is raised, the carpets are allowed to part and make the higher pile dictated by the let-off. Adjustment of knife position to exact center of the new length of crossing pile yarn is necessary to get similar heights of pile top and bottom.

Let-Off of Foundation Warps. The conventional square beam bar fitting in the 30" flanged type of beam of the foundation warps carries a wheel which gears into a worm on a cross-shaft, as shown in *Figure 7*. The worm turns by the action of a ratchet on the cross shaft, and the movement comes from a lever working in the slot of an arm and connected by adjustable straps to the jumbo.

The amount of oscillation of the jumbo, i.e., the mean position between extreme points, determines the length of sweep of the moving ratchet. The slotted arm moves vertically by means of levers connected to a long rod under the loom which joins up to the sword, the motion of which supplies the initial energy for pushing the ratchet.

As the warp works off, and the beam needs to revolve faster, the jumbo straps can be adjusted so as to allow more ratchet sweep. At the end of the jumbo may be seen the lever and weight which keep up a constant tension on the warp as the jumbo oscillates with the change of the heddles. The worm shaft carries a brake to prevent over-running.

Picking. Illustrated on page 143 is the picking motion, which is strong, simple, and easy of access. Outside the loom a wooden picking arm carries an adjustable shoe which is contacted by a bowl on the driving wheel on the bottom shaft. When the arm is lowered by the bowl, the end depresses a metal

Figure 7. Foundation warp let-off motion

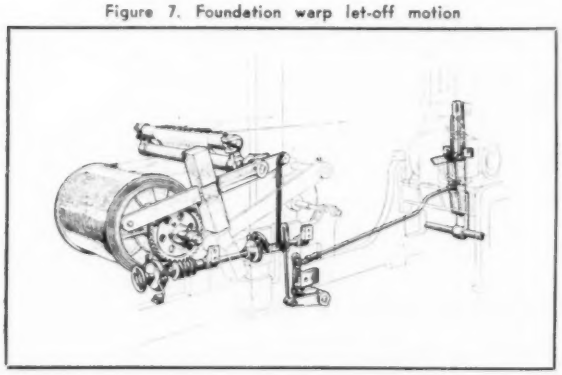
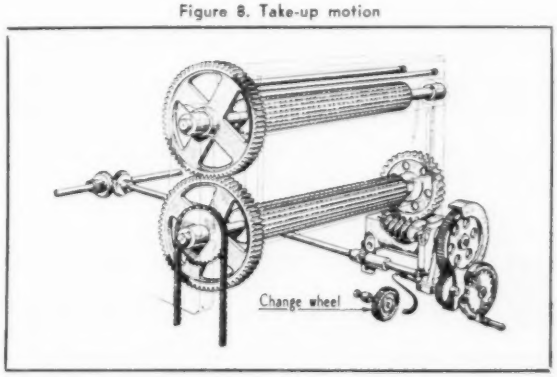
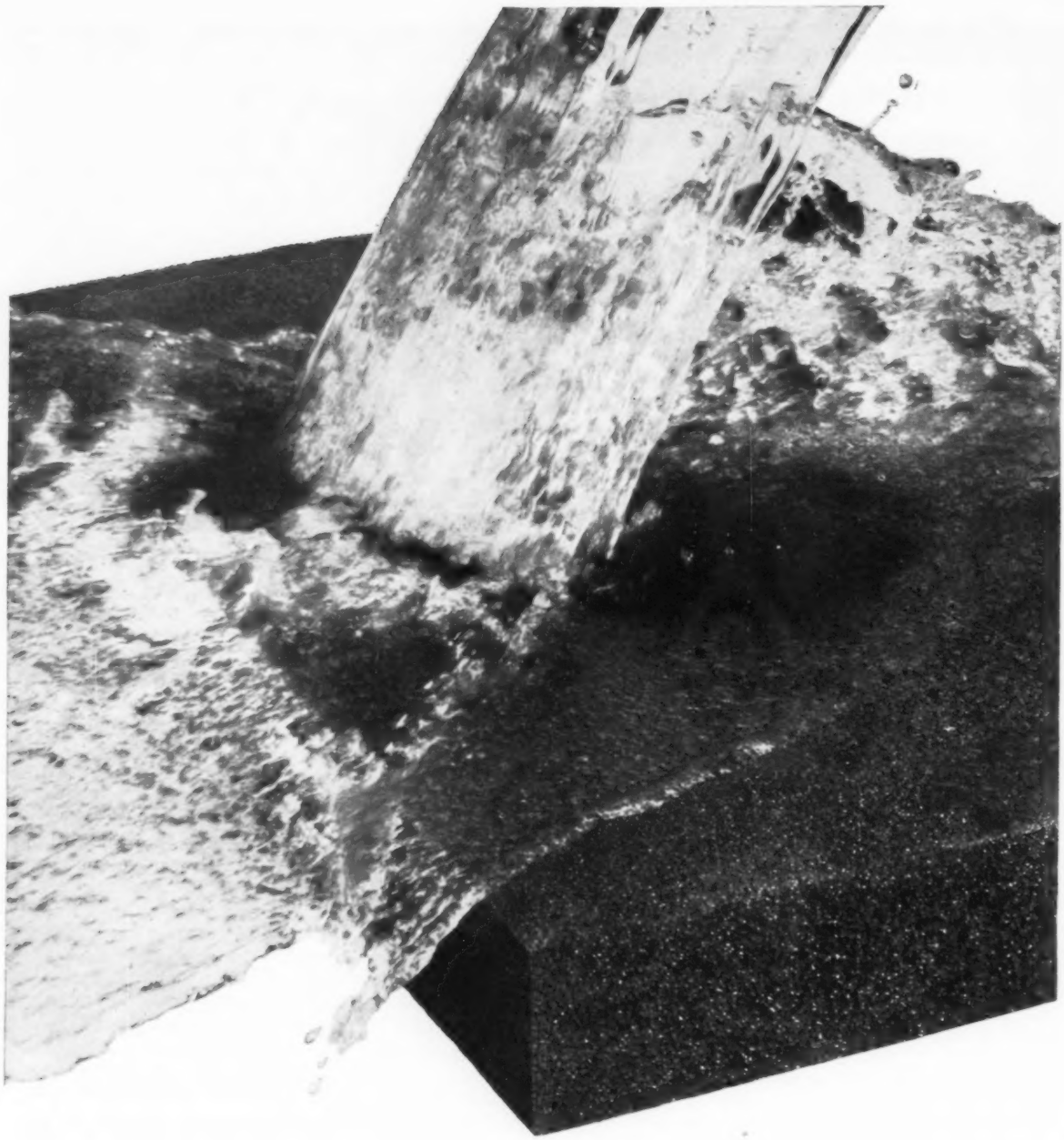


Figure 8. Take-up motion





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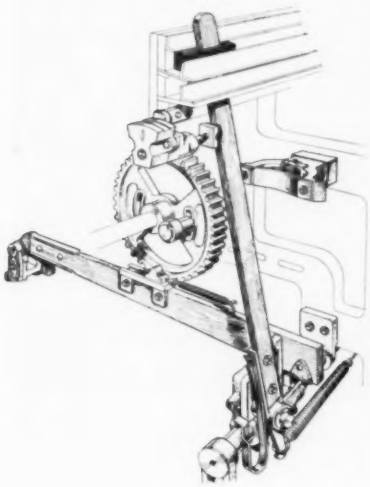
hammer, at right angles to the picking stick, which is carried forward. Buffer springs steady the stick on its return.

Two separate pickers ride in the two boxes on one picking stick, to



Picking motion

contact the top and bottom shuttles simultaneously. The top shuttle rides easily on the top chain and stuffer warps. Some opinions are for a two-fold filling, for strength and selvedge-making, though a good single is quite effective. It has been found that in some cases the top filling requires more drag than the bottom.

The narrow loom shuttle takes a 12″ cop. In the 16/4 width (taking a 16″ cop) it is advisable to change the two shuttles at the same time—a measured-length cop would save waste. A filling fork at each end of the loom works a stop motion in case of filling breakage.

Beat-up in this loom is single. A heavy vertical lever supports the short crank arm, which connects by a horizontal arm to the sword. The heavy metal lathe-bottom (going-part) provides the strength needed for beating-up the two wefts.

Take-up is simple and reliable, coming from a bevel drive at right angles to the bottom shaft geared through a small counter shaft to the spiked roller of the bottom carpet. This roller is geared into the top carpet roller. The change wheel is within easy reach. A long chain driven by a sprocket wheel on the carpet roller supplies the slow motion required to roll up the woven carpets behind the weaver on a special stand. See *Figure 8.*

Heddle Motions. The cams for lifting the heddles are assembled at the end of the loom and are within easy reach. *Figure 9* shows the shape and arrangement of cams and the weaving plan. This plan may be varied by placing the stuffer heddles immediately behind the pile shaft. There is a nine-inch lift of the pile warp, and about a six-inch lift for the chain and stuffer warps.

The cams work on a shaft parallel with the loom end, and are of the stout plate type with tracks. The drive is from a bevel wheel through gears on a counter shaft. Chains from each end of the tall cam levers connect round pulleys over and under the heddle shafts in a positive motion. The two-shot plain structure requires seven cams, two for the stuffer warps lifting one up and one down, two pairs for the chain warps lifting two up and two down, and one for the pile warp.

A stop motion for the pile warp depends on contact of the empty heddle—which, because of the broken thread, is under no tension—with a strip running across the top of the shaft. This stop motion, together with a conventional drop motion on the bottom chain warp, and the knife cord stop motion, registers on the warning light board which is level with the weaver's eyes.

Twin Pile Warp Weave. Variety in weave can be introduced by the addition of pile cams and heddles. A simple variant is shown in *Figure 10,* which shows a mottle weave, i.e., two warps of different colors alternately coming to the top, using the same shape of cam in each case. These two pile cams, instead of moving the heddles directly up and down, have a dwell in the middle so that the pile takes two shots in moving from one carpet to the other. This makes for a kinder motion to the yarn and can profitably be used in plain colors.

Provision is made for two pile warp beams, two stuffer warp beams, and two chain warp beams. In preparatory work, Carpet Trades make no difference in winding and beaming for face-to-face looms, and the materials employed are similar to those used for the conventional wire loom types.

Figure 9. Weaving plan and cams for two-shot face-to-face weave

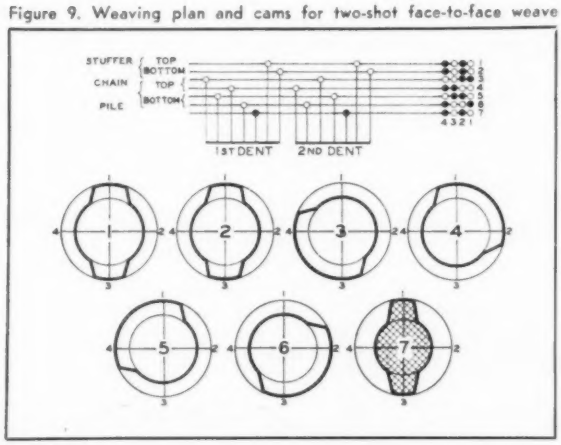
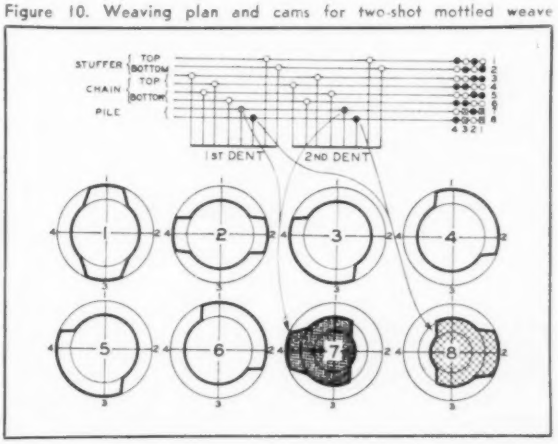


Figure 10. Weaving plan and cams for two-shot mottled weave



First in Georgia to get supervision diplomas

Left to right: STANDING—C. D. Broadwell, personnel manager and instructor; Foye Boswell, supervisor of methods and standards and instructor; E. S. Vance, overseer of drawing and roving; Kenneth Hughes, spooling and warping foreman; Lonzie Edge, overseer of warp spinning; Oris Garrett, overseer of spooling and warping; and H. E. Chadwick, assistant supervisor of methods and standards. SEATED—Foy Justice, assistant overseer of carding; J. T. Givens, spinning foreman; and Plez Johnson, overseer of filling spinning. C. J. Brogdon, now assistant superintendent of the Anderson plant and one of the first instructors, does not appear in the picture.

■ EIGHT supervisors of the Columbus, Ga., plant of the Bibb Manufacturing Co. were honored at a dinner on September 5 for being the first in Georgia, and among the first in the South, to earn supervision diplomas in the vocational textile program.

In presenting the diplomas, John S. Turner, vice-president in charge of Bibb's Columbus operations, paid tribute to these men for spending 80 hours of off-duty time per year for the past four years in study to improve themselves as supervisors, and also complimented the instructors for their efficient work.

During their study the men completed units in safety, material waste control, quality control, work simplification, time study, cost control, job evaluation, wage incentives, human working relations, lesson instructing, and conference leading.

Bibb's Columbus plant was the first in Georgia to incorporate the supervision courses into the vocational textile program, which also includes courses in textile manufacturing mathematics, technology, and fixing.

Vocational courses are operated in Georgia textile communities through the cooperation of the plants, the local school authorities, the vocational division of the state department of education, and the industrial education department of Georgia Institute of Technology. Similar programs are conducted in the other southern textile manufacturing states, the announcement indicated.

How to improve the hand of Dacron fabrics

Abstract*

■ A NEW process has been developed that improves both the appearance and hand of 100% Dacron filament yarn fabrics. Called the C-H-C (calendering, heat-setting, and caustic-process), it improves the liveliness, drape, and covering power, as well as giving the fabric a warmer, drier hand than that of the untreated fabric.

The type of hand obtained by the process can be varied, according to the equipment used. If the fabric is processed without tension, as in a beck, a more supple hand results; if processed with tension, as on a jig, a crisper hand is produced.

*From Bulletin D-97, Textile Fibers Department, E. I. du Pont de Nemours & Co. (Inc).

Preparation. The fabric is scoured in the usual way, the exact procedure depending on the amount and kind of soil, size, and oils present. If the fabric has been woven of waxed yarns, the goods should be prescoured in a bath containing xylene or Varsol.

Calendering. Calendering flattens the yarns, increasing the fabric's covering power; and reduces fabric thickness, making it "light and airy." The conditions used are:

1. 10-15 tons pressure
2. 200-350 F
3. 15-20 ypm
4. 1 pass each side

These conditions appear to plasticize the fabric surface to some extent; many filaments within the yarn are deformed. This produces sharp edges on the filaments.

After calendering, the fabric should be scoured in a crab at the boil with 2% Duponol RA to prepare it for heat setting.

Heat-Setting. Fabrics of filament Dacron must be heat set to obtain dimensional stability and improve wrinkle resistance. Hot-roll, hot-air, or radiant heat equipment can be used, so long as the fabric is heated to 385-420 F for 5-30 sec.

Caustic Soda Treatment. Treatment with caustic soda solution re-

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moves the plastic-like fabric surface and stiffness, and improves liveliness and drape. A weight loss of up to 4% will occur; the amount can be regulated and duplicated by control of caustic concentration, temperature, and exposure time.

Procedure:

1. Make up 3% caustic soda solution and enter fabric at room temperature.

2. Raise temperature to 210-212 F, hold for 30 min, cool to 160 F over 20-min period, drop bath.

3. Rinse in cold water for 5 min, drop bath.

4. Rinse for 5 min in cold bath containing 2 g/l glacial acetic acid.

5. Drop bath, rinse in cold water for 5 min.

The fabric can be bleached with sodium chlorite, if necessary.

Standard dyeing and finishing procedures should be used. An antistatic finish should be employed in the final rinse, and the fabric dried on a clip frame if conditions permit.

After the finish has been applied and the fabric has been dried, it should be palmered at wet width, using 35 psi steam pressure and a medium-weight blanket.

Textile courses for industrial engineering students

■ THREE new courses for engineering students seeking careers in the textile industry will be initiated by the University of Tennessee's Department of Industrial Engineering during the 1958-59 school year.

"This program is being undertaken with a view of helping the numerous textile establishments of Tennessee secure technical and management personnel," said Professor Howard P. Emerson, head of the industrial engineering department, pointing out that the textile industry is among the three largest manufacturing industries of the state.

"It is the conviction of our engineering staff that an industrial engineer, with his training in basic engineering, quality control, work measurement, methods, cost accounting, and labor relations, supplemented by some background in textiles, will prove useful to the textile industry," Professor Emerson added.

The courses will be taught by Howard L. Loveless who joined the University staff as assistant professor of industrial engineering last January. Professor Loveless plans to work closely with officials of textile mills of the state, soliciting advice on promoting the program and making arrangements for students to study the operations of various types of textile manufacturing plants.

Watch density of yarn packages to be dyed

■ PROPER density of the package is essential for good package dyeing, and usually a soft density is preferable. To most efficiently control the density of dye packages on the Foster Model 102 winder, the following rules should be observed:

1. Use the Proper Tension Weights (see "A" Fig. 1). One tension weight may be sufficient, or, in some cases, even no tension weight (just the top washer). A little experimenting will soon tell. However, no great change in tension should be made without a corresponding change in pressure. (See Rule 2).

2. Use the Proper Yoke Weight (see Fig. 2). The lighter the weight, the less the pressure and the softer the package. In fact, some yarns can be run without any yoke weight at all. When little pressure is applied, the tension on the yarn should also be light. Otherwise distorted packages will result.

3. Use Pressure Release Mechanism (see Fig. 2). Package dyers using ball bearing balloon spring holders on the Model 102 will find it a useful device for reducing the increased pressure caused by the extra weight of the ball bearing holders.

4. Use Ball Bearing Balloon Spring Holders. These are available only for 1⅝" diameter dye tubes. They are not absolutely necessary for good dye package winding. However, they do permit the holder to run freely and eliminate drag. Hence the package can be wound with very little pressure and can be made as soft as necessary.

From a recent issue of "Foster Facts", a Foster Machine Co. publication.

FIG. 1. The self-threading tension attachment with which the Foster Model 102 for dye package winding is supplied. The amount of tension applied to the yarn is regulated by the number of weights put on the tension post.

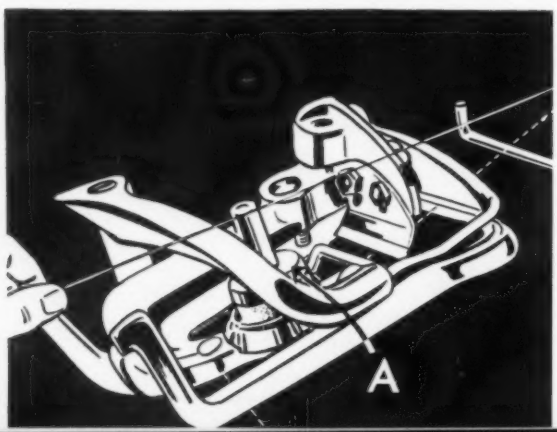
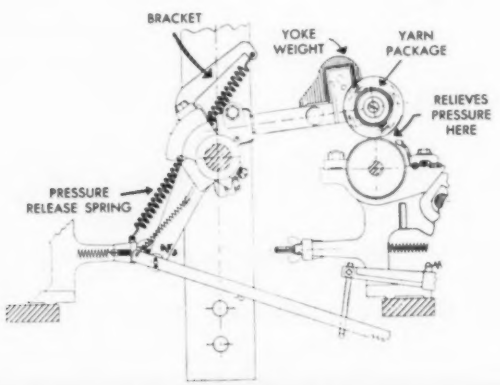


FIG. 2. The yoke weight, shown here, governs the amount of pressure of the package against the winding drum. The pressure release mechanism is a relatively new improvement for the Foster Model 102.



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This method has been thoroughly tested and is now in successful use in full-scale commercial operation. Application for a patent covering the SOLVAY Activated Hydrogen Peroxide Bleaching Process has been filed. The process is available to bleachers under a royalty-free license.

Write now! Full details of process, techniques, results!

Sodium Nitrite • Calcium Chloride • Chlorine • Caustic Soda • Caustic Potash Chloroform • Potassium Carbonate • Sodium Bicarbonate • Vinyl Chloride • Methyl Chloride • Ammonium Chloride • Methylene Chloride • Monochlorobenzene Soda Ash • Para-dichlorobenzene • Ortho-dichlorobenzene • Carbon Tetrachloride Ammonium Bicarbonate • Snowflake® Crystals • Aluminum Chloride • Cleaning Compounds • Hydrogen Peroxide • Mutual Chromium Chemicals

Allied Chemical

SOLVAY PROCESS DIVISION
61 Broadway, New York 6, N. Y.

SOLVAY branch offices and dealers are located in major centers from coast to coast.

SOLVAY PROCESS DIVISION
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☐ Please send me without cost your brochure, "SOLVAY Activated Hydrogen Peroxide Bleaching Process for Cotton."

☐ Have one of your representatives call to discuss it.

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SODIUM HYDROSULFITE
TC HYDRO
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SODIUM HYDROSULFITE

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TC-Hydro is a dry, white, free flowing, crystalline powder of uniform size and structure. It is dust free, assuring highest stability and uniformity.

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We have utilized our basic position in Sulfur Chemistry to produce another product of highest purity and quality for use in the Textile Industry.

When You Need It—

Our production is located in the heart of the Southern Textile Industry which permits us to render over-night delivery service to most Southern points — also small lot shipments are available from centrally located warehouses.

Phone, Wire or Write for literature and test samples if desired.

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work . . . says "Mark-O-Merit" ®

moves *faster*

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Shamrocks

Let a Shamrock representative check your plant. His constant contacts with mill operations can prove helpful to your problems.

Your Shamrock representative is a trained *specialist* in the application of Shamrock Canvas Baskets and Trucks to varied plant operations. He can help in suggesting efficient work flow systems—using standard or made-to-order Shamrock styles to fit your particular plant needs. *Get his helpful advice!*

Shown above is the Shamrock No. 19 Truck, leather reinforced around top rim and at ends of strips; this Shamrock is being used for transporting yarn on cones. For complete information, write direct or contact nearest sales office listed below. MEESE, INC., Madison, Indiana.

SALES OFFICES: NEW YORK—F. R. Tyroler, 55 West 42nd St., PE 6-0615; ATLANTA — W. E. Petway, 723 Densley Dr., North Decatur, Ga., ME 6-3192; FORT WORTH — V. M. Hooton, 4220 Normandy Road, Tel. JEfferson 6-6564; WEST COAST — Petersen-Daniels, Inc., 3311 Beverly Blvd., Montebello, Calif., RAymond 3-7003. Export Mgr. — R. A. Auerbach, Easton, Pa., Cable Address: "Natly."

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the Whitin SUPER J* COMBER gives you...

Higher Production

Greater Nep Removal

Unsurpassed Sliver Quality

Lowest Maintenance and Operating Costs

The latest model Super J Comber combines even higher production (up to 52 lbs. per hour) with exceptionally efficient nep removal. Operating smoothly at 150 nips per minute, its many special construction features have won enthusiastic praise from users in every combing center in the world.

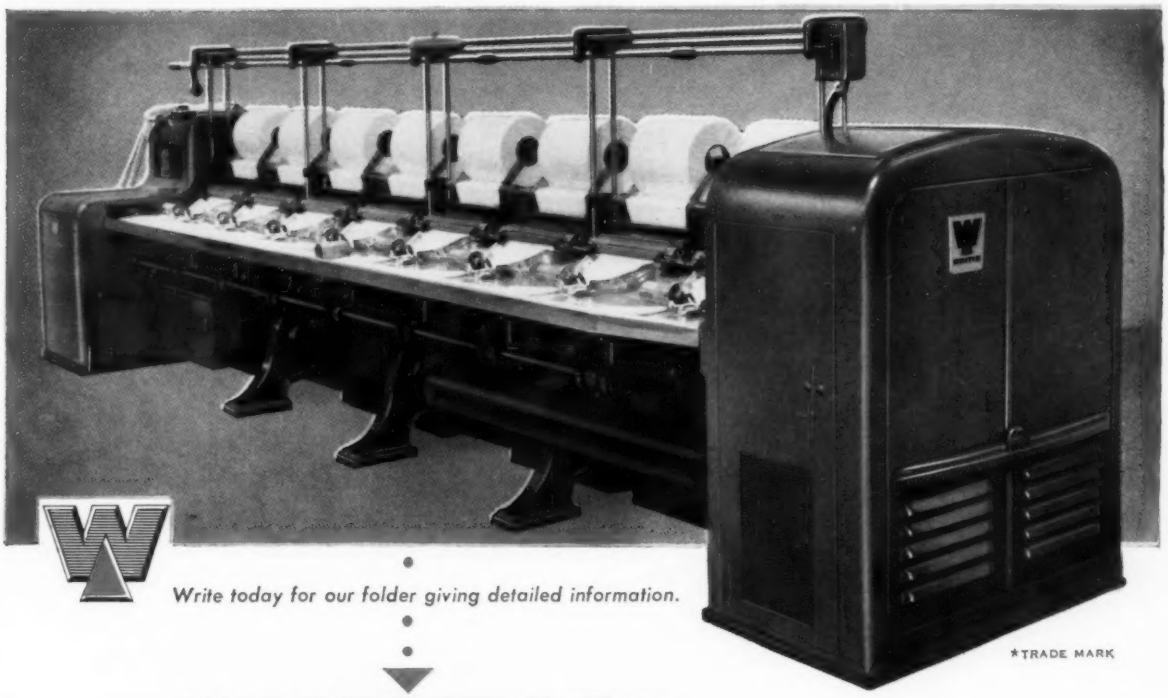
With the Super J, extremely even sliver of finest quality is produced, settings are very accurately held and waste removal is precise. Because it has up to 50% fewer parts than other combers, its maintenance cost is very low. To get maximum production at lowest cost per pound, your best buy is the Whitin Super J!

• SPECIAL FEATURES •

- 8 heads, single side.
- Very precise construction.
- 50% fewer parts than competitive combers.
- Improved sliver quality from new nipper assembly, heavier detaching rolls and weighting.
- Efficiency up to 97%.
- Maintains settings between annual overhauls.
- Simple setting, timing and waste control adjustments.
- Exceptionally low maintenance costs.
- Easy to operate.

PRODUCTION — POUNDS PER HOUR AT 100% EFFICIENCY
Taking Out 10% Waste

FEED RATCHET	LAP WEIGHT — GRAINS PER YARD			
	700	800	900	1000
13	37	42.2	47.5	52.7
14	34.4	39.2	44.2	49
15	32.1	36.7	41.3	45.8



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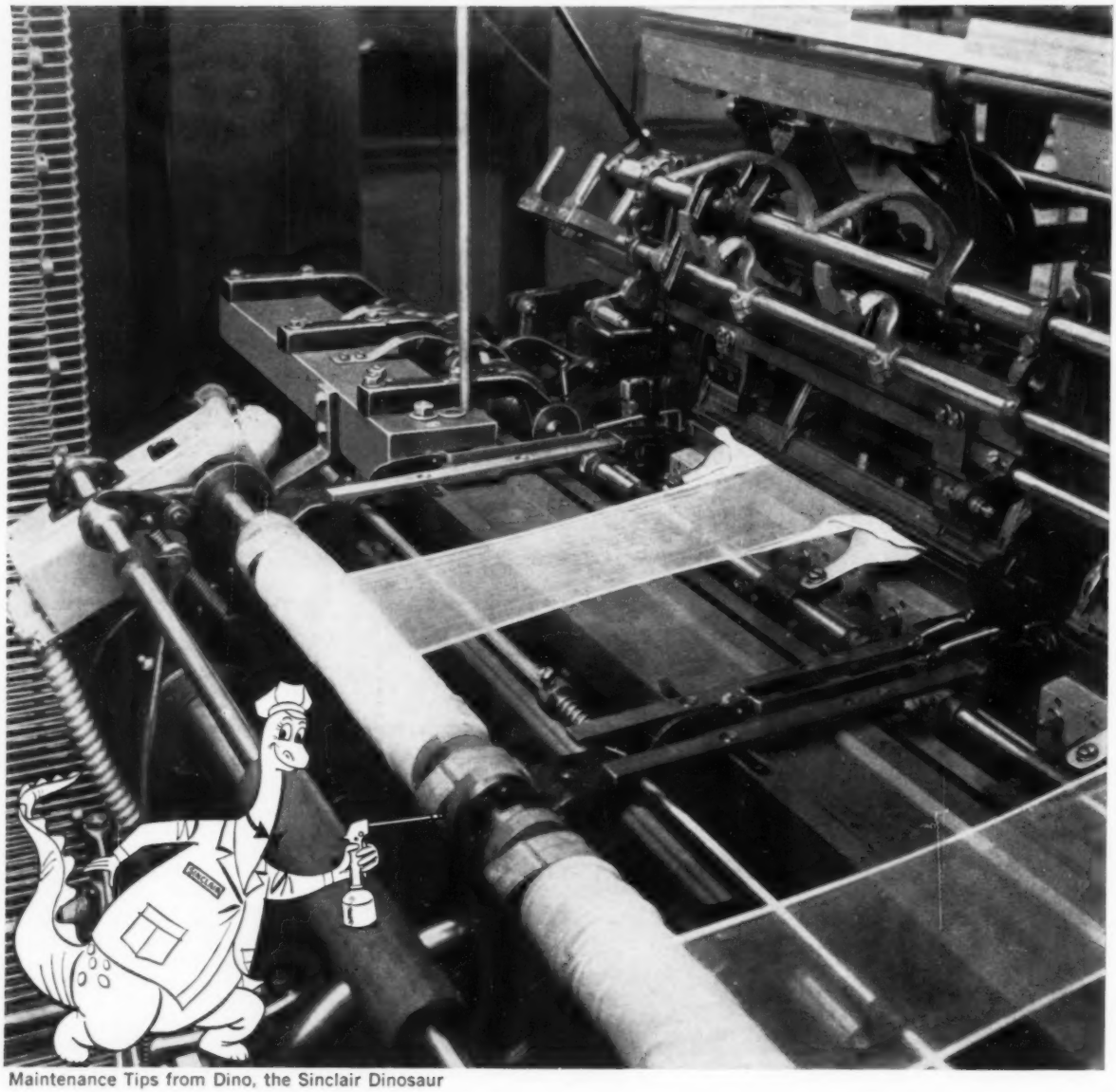

Maintenance Tips from Dino, the Sinclair Dinosaur

Makes Needles Tend to Their Knitting

Here's why Sinclair Crystoil keeps needles knitting. This specially-formulated needle oil keeps needles free of rust, resists encrustation, actually removes size or crust build-up.

Another advantage: Crystoil's light color makes it easier to wash stains out of knitted goods. And because Crystoil contains a special oiliness agent for greater anti-wear and anti-rust protection, needles last longer, too.

Look into *all* the advantages of Sinclair Crystoil or Crystoil Light (for finer gauge machines). Call your local Sinclair Representative or write Sinclair Refining Company, Technical Service Division, 600 Fifth Avenue, New York 20, N. Y. *There's no obligation.*

SINCLAIR
CRYSTOIL NEEDLE OILS

Knitting Section

SALES PICK-UP IN A BATH

SCOUR and DYE
with one product in just one bath

Stimulon

STIMULON's one-product, one-bath technique drastically reduces nylon hosiery and knit fabric processing time and cost. Even heavily soiled fibers can be scoured and dyed in a single operation with Fancourt's new heavy duty detergent and dyeing assistant.

STIMULON effectively removes soil, waxes and oils from nylon, orlon, Fluflon*, Ban-Lon**, and mixed fibers.

STIMULON assures clean, even dyeing with good color unions by assisting dyestuffs to disperse, penetrate and level.

STIMULON cuts costs, increases efficiency and builds profits.

For complete details on **STIMULON,** *call or write Fancourt today.*

*Trademark of Universal Winding Co.
**Trademark of Jos. Bancroft & Sons Co.

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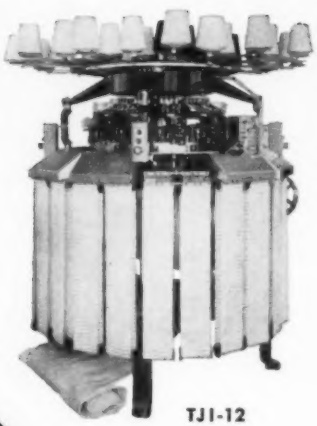


TJI-12

Whether it be on the golf links – for business or evening wear . . . sweaters are fashionable accessories in any wardrobe.

A variety of styles knitted in either synthetic or natural fibers make fine sweaters acceptable all day long.

The Circular Jacquard TJI-12, fully automatic circular knitting machine, offers the largest pattern range of knitted fabrics. Knit-on cuffs are a quality feature and pattern cards permit any design regardless of length, width or placement.

Additional mechanical features make the TJI-12 the most versatile knitting machine in the outerwear field today.*

For complete information write:

WILDMAN/JACQUARD

a subsidiary of Draper Corporation, Hopedale, Mass.

WILDMAN JACQUARD CO.
1210 Stanbridge St.
Norristown, Pa.

All day long . . .
sweaters belong!

**Half hose illustrated were knitted on a Hemphill BANNER machine . . . another quality Wildman Jacquard product.*

Requiring only two operatives, the machine will close the wrappers on approximately 1750 dozen pairs per eight hours. The socks and cardboard backings are placed in the conveyor trough in the left foreground, are wrapped and returned to shelf in top center.

packaging costs dropped

at Wrenn Hosiery Mills with installation of an automatic overwrapping machine

Staff prepared Exclusive

WHEN present plans are completed, Wrenn Hosiery Mills, Thomasville, N. C., will package about 3500 dozen pairs of socks in two shifts each day in processing misses' and children's anklets.

An automatic overwrapping machine does the job by placing cellophane over cardboard to make a more salable package. Retail store outlet programs have augmented the mill efforts to present a neat and attractive package to consumers.

The automatic machine packages and also puts trademarks and seals on socks—all identification marks are applied by the machine, thereby eliminating considerable hand work in applying transfers, riders, and other descriptive markings.

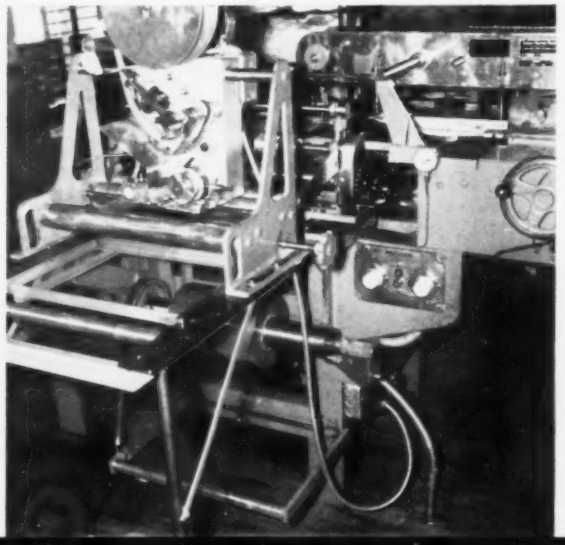
Advantages of the machine include a reduction in floor space required for packaging finished production from about 1100 knitting machines in this plant. Only about half the space required for manual packaging is used for the machine operation (a similar package was made by hand before the change). Packaging facilities have been increased about one third with a substantial reduction in packaging costs.

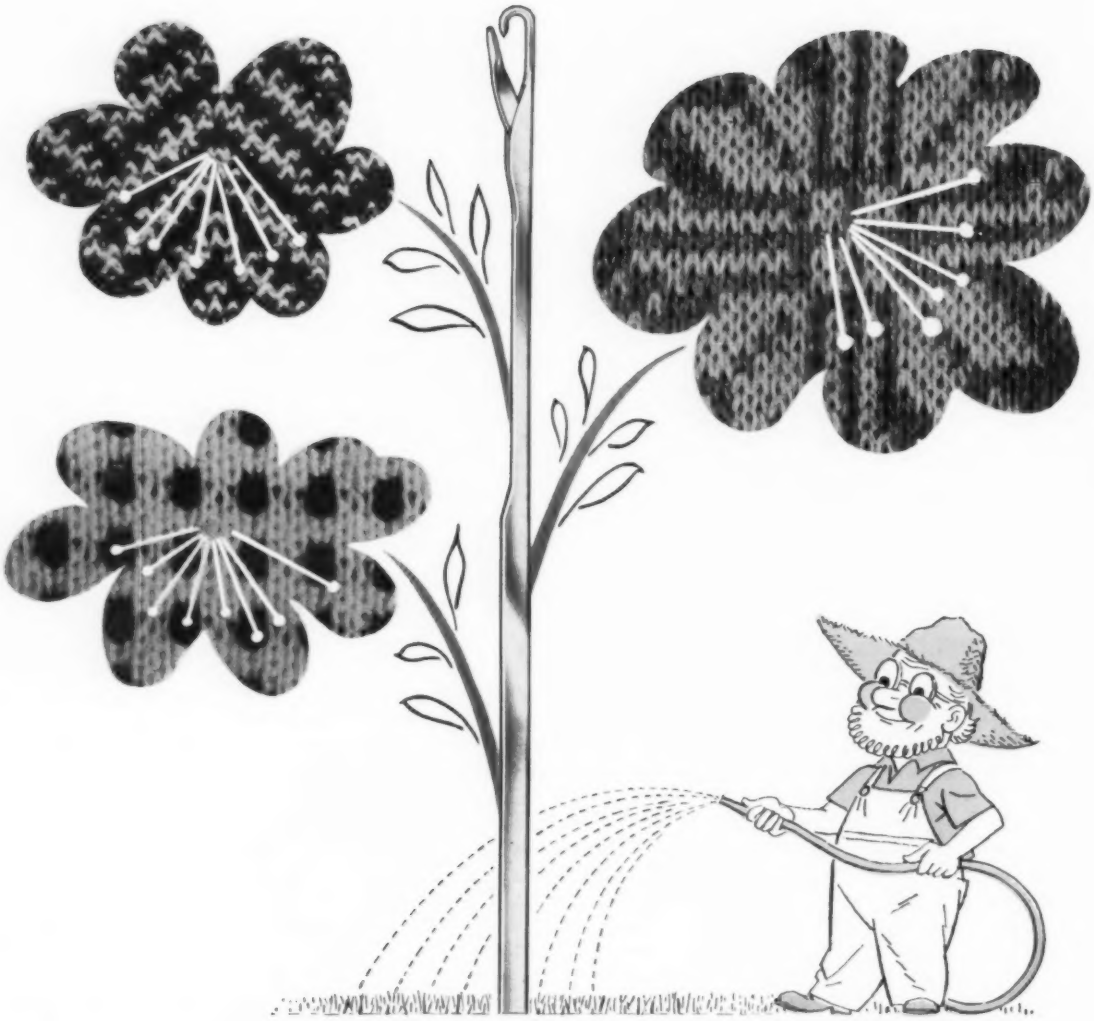
Additional production per square foot of floor space used, savings in packaging materials, and labor savings round out the assets, according to Seborn Perry, president of Wrenn Hosiery Mills. The machine is expected to pay for itself in two years on the basis of present operations, and although only one machine is in operation now plans call for three additional machines to be added as quickly as practicable.

Two operators take care of the packaging process; one feeds socks to the machine; another removes the packages from the machine. Maintenance is noted as negligible once the unit is properly adjusted for operation. The machine was supplied by Hayssen Manufacturing Co.

Considerable hand work is saved. The machine puts all identification marks, trademarks, and seals on the socks as it wraps them.

The wrapping film used is taken from the roll visible beneath the frame work in the left foreground. Controls are easily reached.





Flowers that grow from an Arrow Needle Plant

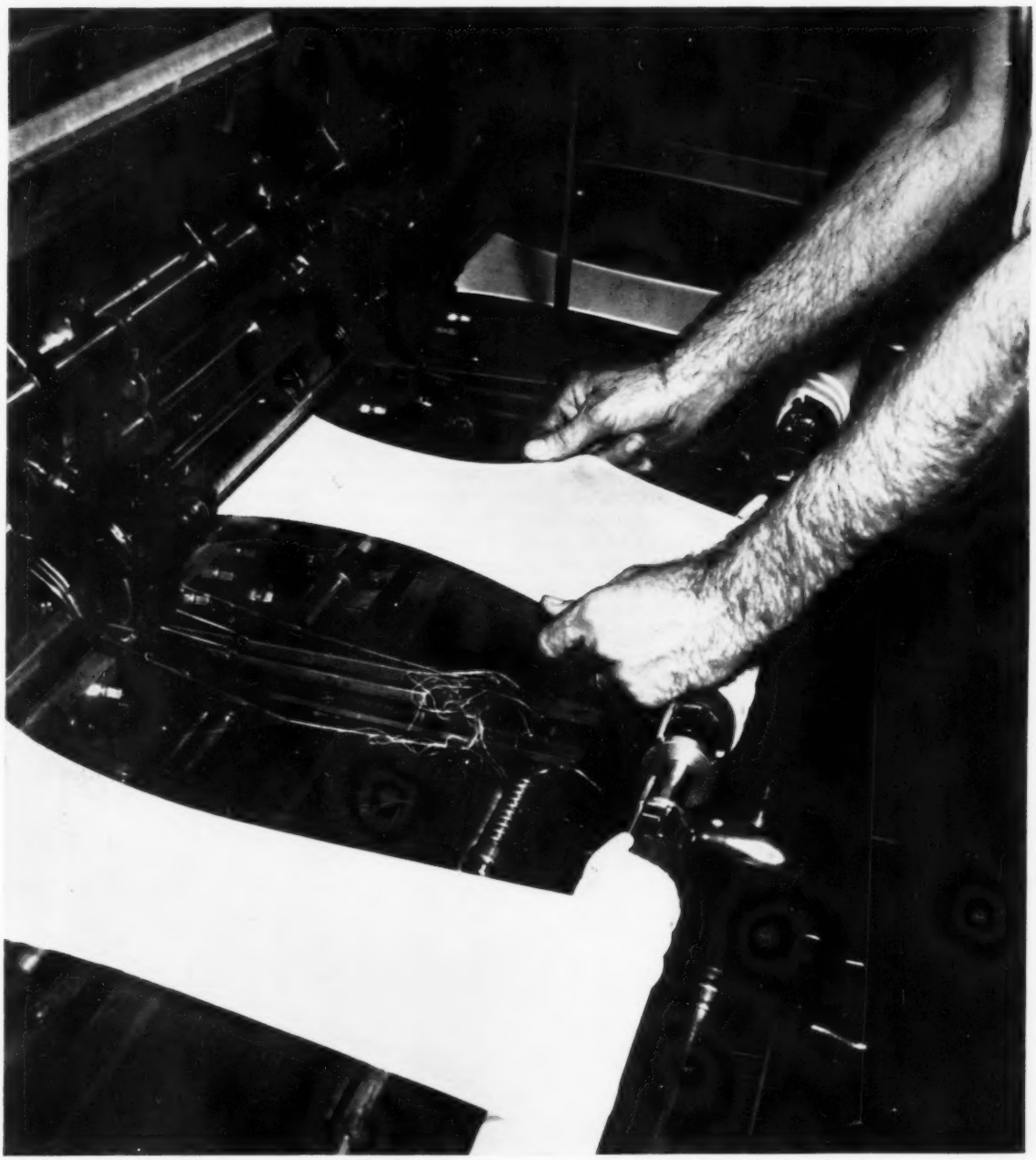
In all the excitement about beautiful latch-knitted fabrics, the mill superintendent never loses sight of knitting room costs . . . and that's where Arrow Latch Needles come in. Smooth, strong, free in latch movement, Arrow Latch Needles give trouble-free performance . . . cut knitting costs . . . and they are backed by the service organization of Textile Machine Works, world's largest builder of precision knitting machines. To check the performance of Arrow Latch Needles in your mill — on one machine or a battery of machines — call or write us today. Demonstrations arranged at your convenience.

Wire Products Division
TEXTILE MACHINE WORKS • READING • PENNA.
In the South: Asheboro, N.C. In the North: Manchester, N.H.
Builders of Textile Machinery Since 1900

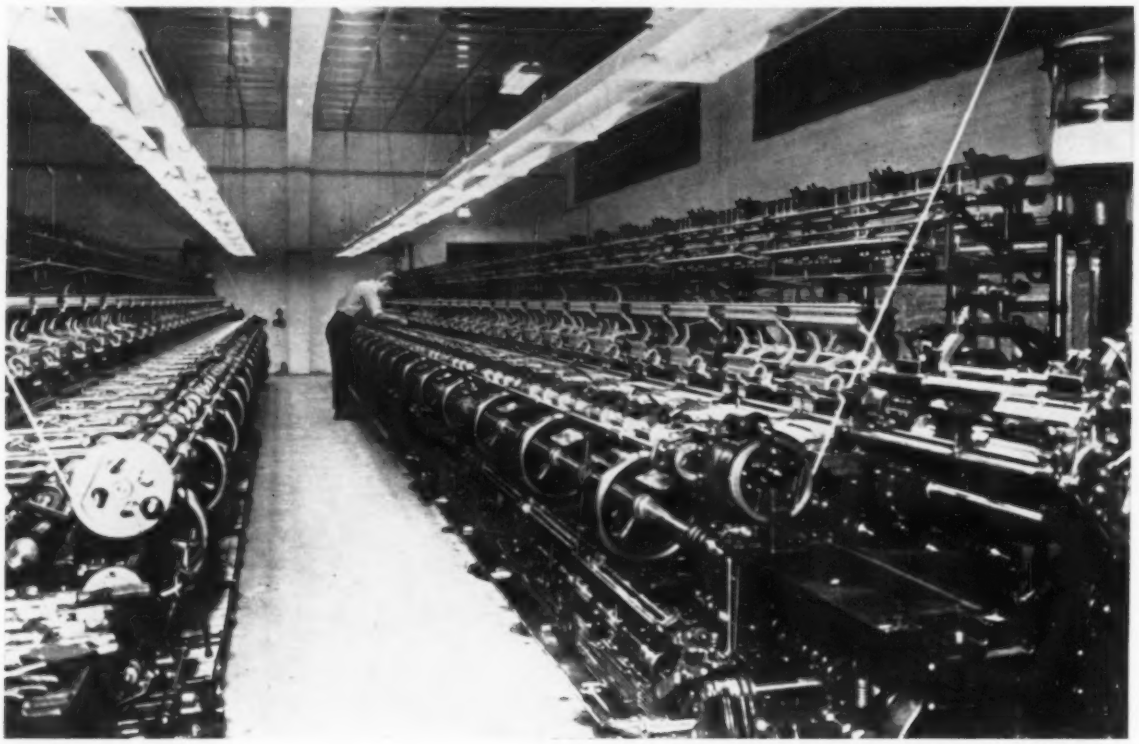
Arrow LATCH NEEDLES

IMMEDIATELY INFORM FIXER OF DEFECTS

Don't wait until the defect is found at inspection



In this knitting plant, Ke-Ri O Y, Tornio, Finland, automatic machinery is the answer to strong competitive pressures which demand the optimum in efficiency and the minimum in unit costs. Of recent years such scenes have become familiar across Europe.



Courtesy, Textile Machine Works

F-F mill automation spreads

European mills are reducing their already low labor costs with new automatic equipment

by D. Coleman
Exclusive

THE USUAL strong competitive pressures require the utmost in efficiency and lower unit costs in the knitting industry, and have encouraged the use of more automatic equipment and the modern trend to multiple machine assignments — even in Europe. There, unusually low labor costs are achieved in many mills manufacturing full-fashioned hosiery, and although labor costs are already lower (all other factors being equal) in Europe than in the U. S., overseas manufacturers have gone all out for automatic machinery to further promote the advantageous labor position.

Frequently found in the more competitive and progressively managed hosiery mills in Europe is an American-made automatic full-fashioned hosiery machine (see accompanying illustration). This improved automatic knitting machine is reported to be giving higher production with average or below average operators, and has achieved a reduction in the time previously required to train new operators.

A review of the hosiery industry in Germany, France, Italy, Belgium, Netherlands, and Finland, reveals the latest automatic equipment in operation to assure a competitive advantage. Mill men in these countries cite several automatic features of the machines that effect economies in operation:

Automatic narrowing heads eliminate the necessity for hand-racking narrowing and carrier spindles, and narrowing fingers are positioned automatically for each phase of the narrowing action. A specially designed motor rack-out mechanism permits automatic return of the carrier spindles to the starting position at the end of each set. The built-in versatility of automatic narrowing heads facilitates a wider range of styles with minimum mechanical changes to the narrowing head, thereby eliminating the human error. Safety devices effectively prevent overtravel of the narrowing

(Continued on page 159)

Bottleneck of looping eliminated

with attachment for conventional machines, manufacturer claims

■ AN ATTACHMENT for ordinary looping machines, which the manufacturer plans to make available to seamless hosiery mills the early part of next year, is said to offer the following principal advantages:

1. Increase of looper department production to the full capacity of the machines utilized;
2. Provision of a looping job that prevents runs from the looping line;
3. Elimination of the necessity for long training periods for development of efficient looper operators;
4. Operator fatigue is reduced since eye strain is no longer a problem.

Known as the A M S L attachment (A M S L stands for Automatic Micro Safety Looping), it reinforces the ordinary looping and eliminates the necessity for the operator to put every loop of the fabric on a point of the looper dial, the manufacturer claims.

Designed for installation on any conventional looper, the attachment is mounted on the stationary dial cap at a point in advance of the usual looping action. (See the accompanying photograph.)

How it operates. Essentially, the compact device comprises a curved needle, a yarn depressor, and a chaining finger synchronously operated by mechanical means from the main gearing to achieve a 3.5 to 1 ratio of the attachment needle to the looping machine needle.

As the looper dial automatically rotates clockwise, the fabric is brought first in the path of the attachment needle which is threaded with a single yarn, and which oscillates in an arcuate path at 3.5 times the speed of the looping machine needle.

Here the sides of the fabric are pulled together by the looping action of the attachment yarn as it passes alternately through the fabric sides and around the looper points.

After the attachment has completed its operation on the fabric, the rotating dial carries the sock or stocking past shears which remove the excess fabric above the looping line (see sketch). Thereafter, the work is carried by the dial to the conventional looping mechanism which operates at a 1 to 1 ratio with respect to the dial points.

The combination of the attachment (which introduces a single thread 3.5 times with respect to the dial points) and the ordinary looper (which ties in point by point) insures a high-speed, yet safe, closure of the fabric to be looped, the manufacturer explains.

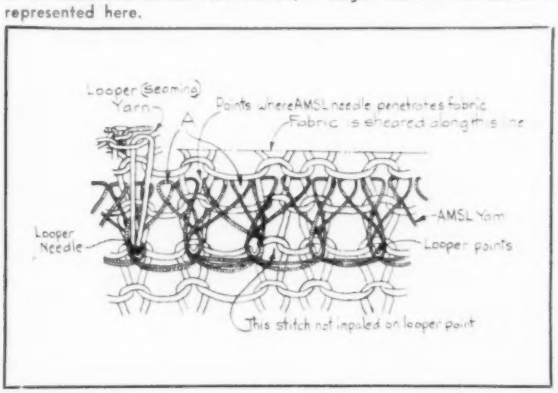
By frequent penetration of the fabric sides, the yarn inserted by the attachment catches all needle loops at once, eliminating the possibility of dropped stitches.

Once the fabric sides are closed by frequent passage of the attachment thread, the subsequent looping action of the regular yarns will interlock with the multiple attachment loops, safely and positively binding the stitches together whether or not they are impaled on the looper points.

During the development period, loopers equipped with the attach-

With the A M S L attachment on a conventional looping machine as pictured here, ordinary looping is reinforced as shown in the sketch at the right, eliminating the necessity for the operator to put every loop of the fabric on a point of the dial to avoid dropped stitches and subsequent runs from the looping line. Thus, production is increased, operator fatigue is reduced, and long training to provide efficient operators is not required.

How the yarn inserted in the fabric by the attachment and the regular looping yarns cooperate with each other in achieving a highspeed, yet safe, closure is shown in this sketch. To avoid confusing the reader, ordinary looping yarns are shown on only a single wale, whereas in actual operation these looping yarns tie in at successive wales. Furthermore, a single thickness of fabric is represented here.



He's available when you ***NEED*** *him*

So are Franklin-Dyed yarns

Yes, Franklin Yarn Dyeing Service is always handy, always dependable, when you NEED it. When you don't, it isn't part of your overhead. Just contact the nearest of our 4 strategically located plants and you'll receive expert and prompt attention.

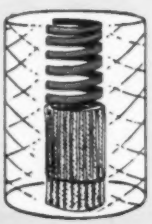
And here are additional benefits from using Franklin Dyed Yarns—all important to you:

QUALITY — We dye exclusively on the Franklin compressible spring. This permits uniform density of packages, which promotes uniform penetration of the dye liquor and resultant uniform shades.

SPECIALIZATION — Yarn dyeing is our specialty. We don't dye just to make yarn sales. Our 4 plants and our entire organization have but one objective — to provide the best yarn dyeing service available.

CONSULTATION — We can help you with your color problems. We have unequalled laboratory facilities, a staff of highly skilled technicians, unequalled experience in time, variety and volume — all at your service.

CAPACITY — With our multiple plants and diversity of equipment, we are literally the largest package dyers in the world — ready to dye all types of spun fibres in any quantity. Contact our nearest plant or office.



X-ray view of Franklin Package, the "secret" of uniform shades. Don't say "package dyed". Say "Franklin-Dyed".

Franklin Process

A DIVISION OF INDIAN HEAD MILLS

Dyers of cotton (carded, combed, mercerized) Orlon* (yarn & tow) Acrilan • Dacron** • Ban-Lon® • Helanca • Spun Nylon • Spun Rayon • Blends • Wool and Worsted yarn

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New York Office—111 West 40th St.
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6-8

*Trademark for Dupont's acrylic fibre **Trademark for Dupont's polyester fibre

ment have been consistently run at the rate of 550 rpm, according to the manufacturer. It has been found that after a few weeks of practice operators have no difficulty in operating a looper at maximum speed.

Presence of the attachment does not complicate the work of the operator nor change the working action of the looping machine. Furthermore, the manufacturer points out, no change is required in the looping line; consequently, alteration of knitting machines is unnecessary.

Licenses for use of the attachment (on a royalty basis) are available from A M S L Corporation of High Point, N. C., and Laconia, N. H. The attachment will be manufactured by Scott & Williams, Inc., for sale to mills that have been licensed.

F-F mill automation *(from page 156)*

nuts in either direction.

An automatic welt bar unhooking device makes it unnecessary for the operator to hook up the welt bar straps prior to the beginning of a new set, or to unhook the welt bar after the welt has been completed. This frees the operator for other duties. Welt bars are brought back into operating position for the next set by manual operation of the auxiliary reel shaft, and this requires only a few seconds of the operator's time. When one man operates two machines, as in the present trend, the use of the automatic unhooking device is important.

A thread separator device operates automatically to separate the starting yarn ends from welt and main carriers brought in from the right, and from all carriers brought in at the beginning of splicing. Separation of the yarn is made on contact with electrical resistance units that are mechanically controlled from the auxiliary chain button.

Automatic lubrication is provided to 206 points on the machine, thereby further reducing labor costs in servicing as well as effecting a cut in lubricant costs.

A chain button alignment safety is mounted over the buttons of the main pattern chain and is activated by a switch to stop the machine when a button becomes misaligned.

The main, welt, left splicing, and right splicing friction boxes are automatically controlled and are capable of operating over the full width of the knitting head. Although the remaining friction boxes are manually operated, they are seldom found necessary in the production of the most common styles.

This machine is equipped for the economical and sustained high production of most full-fashioned styles; however, an additional advantage is provided by a number of optional attachments which are available and easily adaptable to the basic machine to make it extremely flexible in the production of all types of full-fashioned stockings.

Executive views *(from page 81)*

make from some of this cotton, but every effort so far made to encourage spinners to demand cotton that will make good yarn rather than cotton measuring up to a certain artificial grade standard, has met with disappointment. Yet, that seems to be the real answer to the problem.

There does not seem to be the slightest hope of the Federal Government ever abandoning its subsidy to the cotton farmers. The Federal Government has encouraged inflation, which has put the cotton farmer at a grievous disadvantage in foreign markets. Cotton is now a big political issue. The little farmers, who number several hundred thousand, and carry a lot of weight with farm-section legislators, feel that they must have this subsidy, and the big cotton producers, who are becoming multi-millionaires raising cotton at these artificially inflated prices, are going to vigorously fight any attempt to cut off the flow of money from the Federal Treasury.

None of these farmers likes to have his acreage reduced, and they are complaining about this phase of the subsidy, so the next step will very likely be the adoption of something like the Brannan Plan, where the cotton farmers are turned loose to produce all the cotton they can and it will be sold in world markets for whatever it will bring, and the American taxpayers as a whole will put up the difference between what the farmer got for the cotton and what it finally sold for. This is a perfectly screwball arrangement, but then we are handsomely conditioned by this time to screwball arrangements. Witness the Soil Bank!

This Soil Bank started off as a serious program to try to help farmers with an arrangement a little less daffy than some of those we had been trying. Unfortunately, practically all socialistic schemes to help some segment of the public at the expense of all of the public are daffy, no matter how you plan.

The Soil Bank, for all its high sounding pretensions, is blighting hundreds or perhaps thousands, of small towns. The average little country town outside of the big industrial sections of the country lives by doing business with farmers. When the federal government pays these farmers hundreds of millions of dollars not to plant their land, the people in the town who have subsisted off the sale of farm supplies are seriously hurt, and frequently ruined.

There has been a widespread outcry from small towns all over the South and West about the disastrous effect of these Soil Bank payments on local business. The

Because It's NEW It's NEWS!

TEXTILE FINISHING NEWS

ALL STAR EXTRA ★★★

NOVEMBER 1958

HYSORB* GIVES FABRICS "THIRST FOR MOISTURE"

FINISHING PLANTS SEE EXTRA BUSINESS IN GROWING DEMAND FOR "HYSORB" ABSORBENCY

A surge of interest in the new HYSORB finish is proving to be a welcome addition to Finishing Plant business, everywhere.

Because the new development adds tremendous features to synthetic fabrics, manufacturers of apparel worn against or adjacent to the skin are seeking licenses to incorporate the comfort-additive to the fabric.

Scholler Brothers, Inc., offer finishing plants, everywhere, an opportunity to test and show the HYSORB finish to their customers. Samples of the product can be obtained without cost or obligation from SCHOLLER BROTHERS.

HYSORB adds a wonderful new comfort dimension to all garments worn against the skin—a tremendous feature for Girdles, Corsets and Brassieres.

Trade Interest In HYSORB Is Running High

With the initial announcement of the HYSORB finish, recently, manufacturers of all apparel, both for men and women, have evidenced unusual interest in its potential.

Such interest has been particularly noted in fields whose product is directed to garments worn against or adjacent to the skin. Because HYSORB assures high absorbency in all synthetic fabrics, the resultant comfort is self-evident.

Extensive tests have shown that HYSORB-finished fabrics permit complete absorbency of perspiration, allows body moisture to evaporate and, generally, minimizes the feeling of constriction often found in fabrics that cannot "breathe".

Manufacturers in all fields are testing the new finish on synthetic fabrics via their converters or finishing plants.

HYSORB Material Offered for Test

HYSORB material together with instructions to finishing plants, has been offered to all manufacturers who are interested in the potential of this great new fabric finishing development.

Such material would be forwarded to finishing plants on request, without cost or obligation. Write Scholler Brothers for complete details.

Synthetic Fabrics Can Now Absorb Perspiration

A feature that promises to add another bright star to the advantages of synthetic fibers is the HYSORB finish that permits absorption of perspiration. All apparel worn against or adjacent to the skin can now be worn as comfortably, in any temperature, as fabrics of natural fibers.

In addition to the absorption of perspiration, the new finish allows body moisture to evaporate with the result that a new appreciation of comfort in synthetic fabrics is made possible.

Women's lingerie, panties, girdles, corsets, brassieres, underwear, leotards, anklets, socks, and many other items of against-the-skin wear can now be worn with a wonderful new degree of comfort and desirability.

Great New Finish Adds Absorbency To Synthetics

A new development in fabric finishes for synthetics promises to open new sales and merchandising potentials for all apparel worn against or adjacent to the skin. The new finish, known as HYSORB, brings to all fabrics of man-made fibers a new concept — a new dimension — in wearability and comfort!

Now, for sheer comfort, man-made fibers can vie with the natural in almost every phase of apparel use! HYSORB, applied to synthetic fabrics (or blends), creates a thirst for moisture. Fabrics can now "breathe"! Body moisture evaporates! Perspiration is absorbed! In addition, HYSORB assures a superior handle that will not harshen even after repeated washings.

Scholler Brothers, Inc., whose laboratories developed the HYSORB finish, will aid manufacturers and finishing plants in determining effect of the treatment on the individual fabric. A letter of inquiry on a business letterhead will bring prompt reply.

WEATHER

HYSORB finished fabric is cooler in summer, warmer in winter, because it "breathes" . . . absorbs perspiration . . . lets body moisture evaporate!

For More Information On HYSORB, Write . . . .

SCHOLLER BROTHERS, INC.

PIONEERS IN THE BETTER FINISHES THAT MAKE THE BETTER FABRICS

Manufacturers of Soaps, Softeners, Sulfonated Oils and Finishes. Collins & Westmoreland Sts., Philadelphia 34,.

IN CANADA: Scholler Brothers, Ltd., St. Catharines, Ontario.

* TRADE MARK REGISTERED

farmer has money to spend, but he doesn't spend it for the things that he would have spent it for to make his money. The money is taken directly out of the pockets of the taxpayers and handed to him, without the unpleasant necessity of his having to work for it, and he can buy his personal needs without having to spend a cent for the farm supplies that he formerly had to get in order to possess any income.

This sort of thing naturally backs up into the industrial regions of the country. When people are paid not to raise cotton, the factories that made the farm supplies are hurt just as the small town dealers are hurt, and sooner or later there will be demands for subsidies somewhere else to remedy the problems brought about by the original stupidity. Prosperity is tied in with production of consumer goods and not the mere expenditure of tax money or printing press money.

THIS MATTER of printing press money is of particular interest right now, since the Congress has just approved an increase in the limit of the national debt, and nearly everybody is happily looking forward to more money being put into circulation so that business will be better and the deficit next year will be bigger. A recent report by the Department of Commerce stated that in July personal income throughout the nation rose from the previous month by about two and one-half billion dollars. However, only one billion of this was supposed to have been created by private industry. One billion resulted from the recently voted pay increase for government workers, and this of course is wholly illusory as having any effect on national prosperity. One group got one billion dollars after it was taken away from another group in taxes or inflation. Another half billion was in transfer payments from the government treasury to veterans and people receiving social security benefits. This also is completely illusory as far as it has any effect on national prosperity.

Our national government long ago adopted a basic "do-it-with-inflation" policy, and the national debt has steadily climbed upward because the national government is too timid to face the facts of life and either tax people more, or spend less money. It is of course extremely hypocritical for legislators to say that they dare not increase taxes, when they do dare take the same amount of money away from the people through the hidden tax of inflation.

The few people in the national government who seem to thoroughly understand where our inflationary policies are leading us, and who courageously try to do something about this problem, are ridiculed by those who know little or nothing about the disastrous effects of inflation, but are keenly aware of the disastrous effects at the next election of voting for higher taxes or lower hand-outs.

Direct taxes are frightfully unpopular. Indirect taxes can be tremendously popular because they let people handle more money, although they may actually keep less of it than they would have under an honest system of taxation.

Says industry shifts emphasis from production to marketing

■ A NEW concept is taking hold in the U. S. textile industry which places greater emphasis on the role of marketing, and bids to end the traditional rivalry between production men and sales forces that is perennially plaguing the councils of management, according to a textile consultant.

R. M. Ashner, senior partner of Werner Textile Consultants, expressed this view in a paper prepared for delivery before the Sixth Canadian Textile Seminar at Queen's University, Kingston, Ontario.

"The most successful mills today are those that have established an efficient marketing department and have coordinated it properly with the production, merchandising and sales departments," Mr. Ashner says.

"At one time," he continues, "the heroes of industry were production men — those whose mills could produce goods faster, better, and more economically. We have now entered into a new era, one in which today's hero and tomorrow's leader is a new breed of textile man — one who can sell faster, better, and more economically. He is so dissimilar to the traditional salesman that he has been given a new designation: Marketing man."

It is inevitable that marketing should become the controlling factor as to what a mill should produce to sell at an acceptable profit, Mr. Ashner points out. Marketing must first determine the market available for the products of a company, and how this market may best be reached through the sales, service, promotion, and advertising efforts. The mills's productive capacity must then be geared to what the market needs and may be expected to absorb. These decisions are reached through the combined labors of an organized marketing set-up

Calling the successful correlation of staff and line functions in a marketing set-up "the most necessary single factor for its over all efficiency," Mr. Ashner points out that the task of a company's chief executive is to maintain a balance between the marketing, production, and administrative services, with emphasis on the relationship between the staff divisions of marketing and production. "In marketing," he says, "the staff forces (often called 'merchandising people') must do the planning and control of sales, while the line forces are doing the actual selling."

In the planning activities he places heavy emphasis on market research, which is called upon to supply realistic forecasts and data to guide production schedules, advertising and promotion needs, and sales quotas. Moreover, market research must be used to obtain information on trends, particularly in connection with products based on changing living standards, new fibers and materials, and general economic developments.

"Since salesmen are by nature wishful thinkers," the paper states, "market research must be perceptive enough to differentiate between their hunches and conjectures on the one hand, and the information implied in their sales reports, on the other."

Mr. Ashner concludes that it is the primary function of marketing to discover whether and where a profitable market exists for a product that can be manufactured by the mill, and to maintain a profitable balance between manufacturing and marketing demands.

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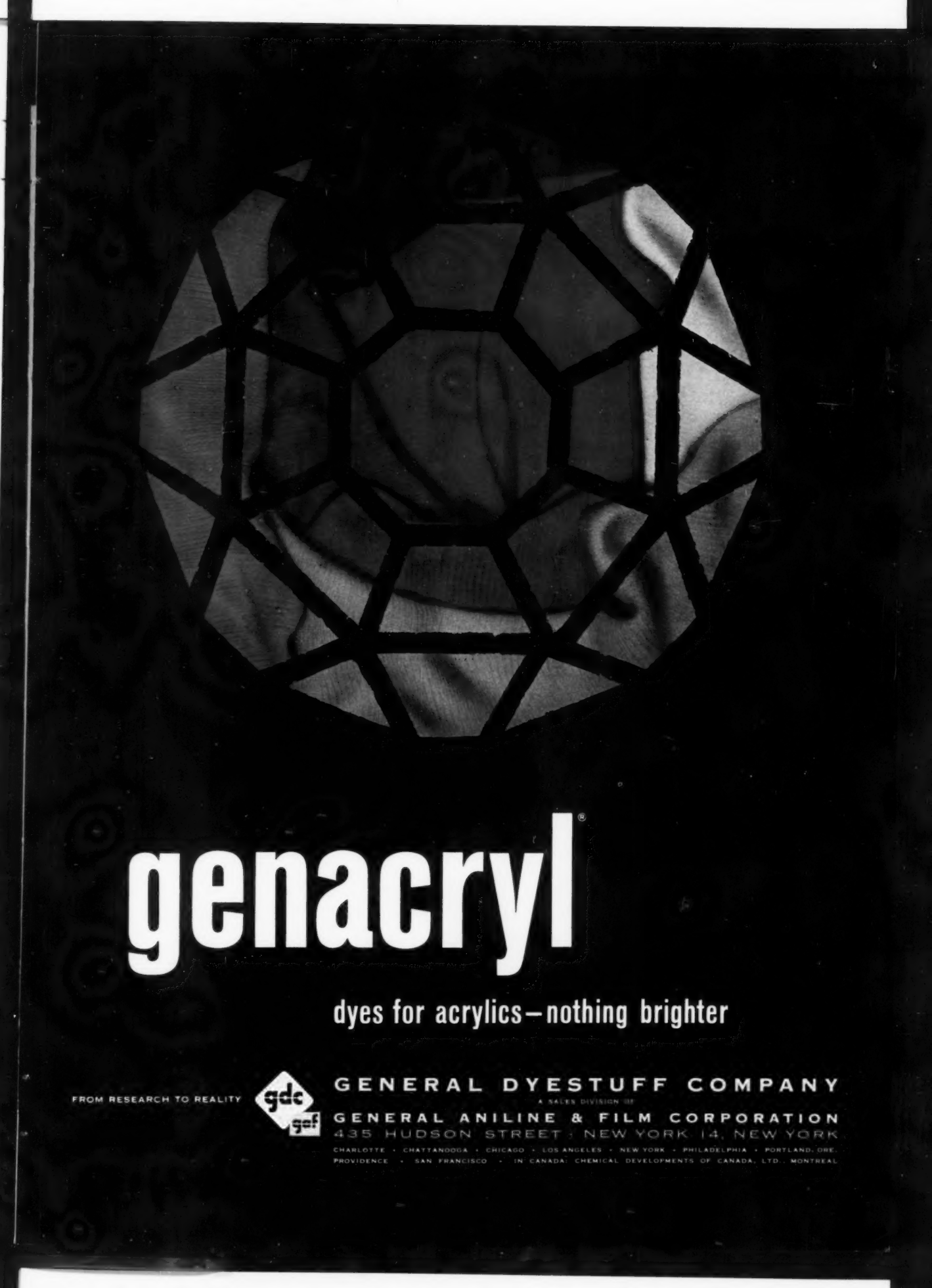
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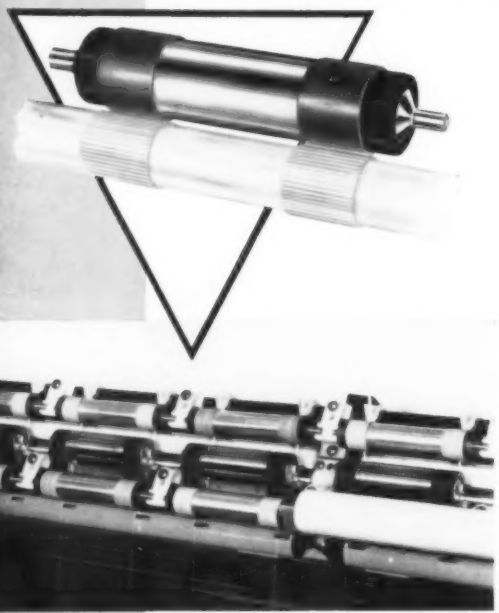

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HOW OTHER MEN MANAGE

• Letters to Editor • Technical Discussion •
• Manufacturing Briefs • Kinks & Short Cuts • Comments from Readers •

Speed up changing card flat drive sprockets

THE EDITORS:

After the drive sprocket shaft and stands have become worn on our cards we metalize the shaft and bush the stands with oil-impregnated bushings. We made the device illustrated in the drawing so the shaft and sprockets could be removed and replaced with ease. It eliminates the use of ropes and weights as well as some hard lifting and pulling.

The materials needed:

A 1¾" section of five-inch black pipe

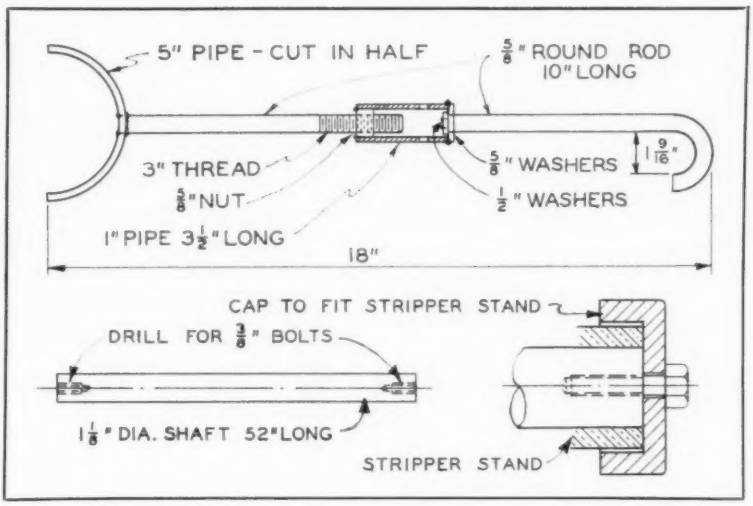
Four ten-inch lengths of ⅝" cold rolled steel

A 3½" section of one-inch black pipe

Two ⅝" hexagon nuts

Two ½" flat washers

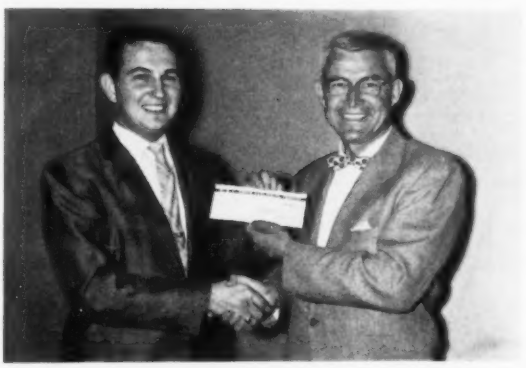
Two steel "stoppers" ¼" thick sawed from one-inch cold rolled steel



The five-inch black pipe section is cut open to form two semi-circles which agree closely with the diameters of flats disks at the front of the cards. Bore a ⅝" hole in the center of the circle. Cut the ⅝" rod into 10" lengths and thread two of them about three inches along one end. Braze or

TI's latest contest winner!

Gene Floyd, 707 N. Sloane St., Clinton, S. C., won the kink contest that ended August 15. He submitted the nomogram for calculating yarn yardages which appeared on p. 137 of the September issue. Mr. Floyd is shown here (left) receiving the prize money from Miltion May, associate editor in the Carolinas and Virginia.



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weld the unthreaded end of the rods to one of the five-inch semicircles as indicated in the drawing.

Make a turnbuckle from the one-inch piece of pipe by welding the stoppers flush on one end, then boring a 5/8" hole in the center of each for the loose end of the buckle. Weld the 1/2" washers on the other two 10" pieces of 5/8" rod so it will fit loosely in the one-inch pipe and will not work through the hole. Bend a hook on the other end of these rods so they will hook over a 1 9/16" shaft.

Turn down the 5/8" nuts to fit the pipe and weld them in place as shown in the drawing. Bore a 7/16" hole about the center of the one-inch pipe so a rod may be inserted for easy turning.

To use the flat holder, take out three flats in one place on the chain. Turn this space to the front of the card so as to face the stripper worm on top of doffer. Place one of the holders on the left side of card through the opening in the flats so the half circle will hold against the flats while the turnbuckle is loosened and the hook is fastened over the guard on the stripper worm.

Place the other holder on the right side of the card against the sprocket in the same way as the other one. Tighten the turnbuckles enough to hold the flats in their present position. The stands may be removed now with ease as well as pulling the shaft and sprockets out the side. The guard over the stripper worm will in no wise be injured by using these hooks, since they are near the ends of the guard and worm.

To use the card flat holder on cards that are not equipped with automatic stripper worm in front, a simple change is necessary. A 1 1/8" cold-rolled steel shaft may take the place of the stripper worm shaft housing by cutting the shaft flush with the stripper roll stands on the sides of the doffer. This size and length might vary according to the kind of cards used.

For a Whitin card the following procedure may be used: Cut the 1 1/8" shaft so it will be 52" long. Turn both ends in lathe so they will be square. While they are in the lathe bore and tap a 3/8" x 1 1/2" deep hole in each end.

Make two cup holders 1 1/2" long from a two-inch steel pipe to hold shaft firmly in stands. Weld or braze a 1/4" thick steel stopper flush in one end of each pipe, then center a 3/8" hole in each.

Place the shaft in the stripper stands on the card and fasten one cup holder on each end of shaft with a 3/8" x 1 1/2" cap screw and washer, so as to hug or hold around the stripper stands.

It will be necessary to make the

5/8" rods about six inches longer on the flat holder which has the hook. We use the same method to fasten the flat holder over the shaft in stripper stands instead of the automatic stripper worm shaft.

CONTRIBUTOR No. 1069

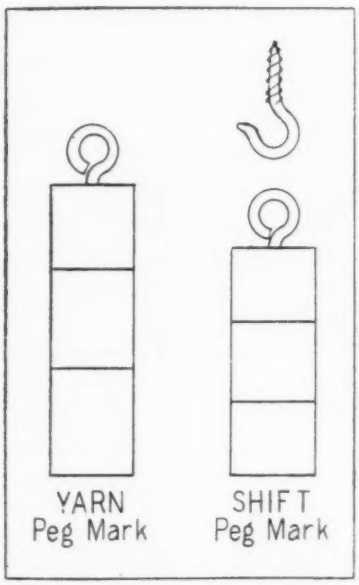
Colored pegs prevent mixed spinning yarns

THE EDITORS:

Our salesmen are continually coming up with orders which require our changing our yarn counts in the plant. Such frequent changing necessarily exposes us to many errors in yarn marking, resulting naturally in mixed yarn lots.

Although our doffers mark the yarn while it is on the spindles, now and then someone supplies them with the wrong chalk. You know the rest. . . .

Our solution to this problem was to get some handles from worn-out brooms and cut them in-



to three-inch lengths. We then obtained hook and eye fasteners, of the screen door type, and screwed the eyes into the ends of the short pieces of wood. The hooks we screwed into the bottoms of the top creel boards of our spinning frames so we could slip the eyes over them and leave the "pegs" hanging from the boards.

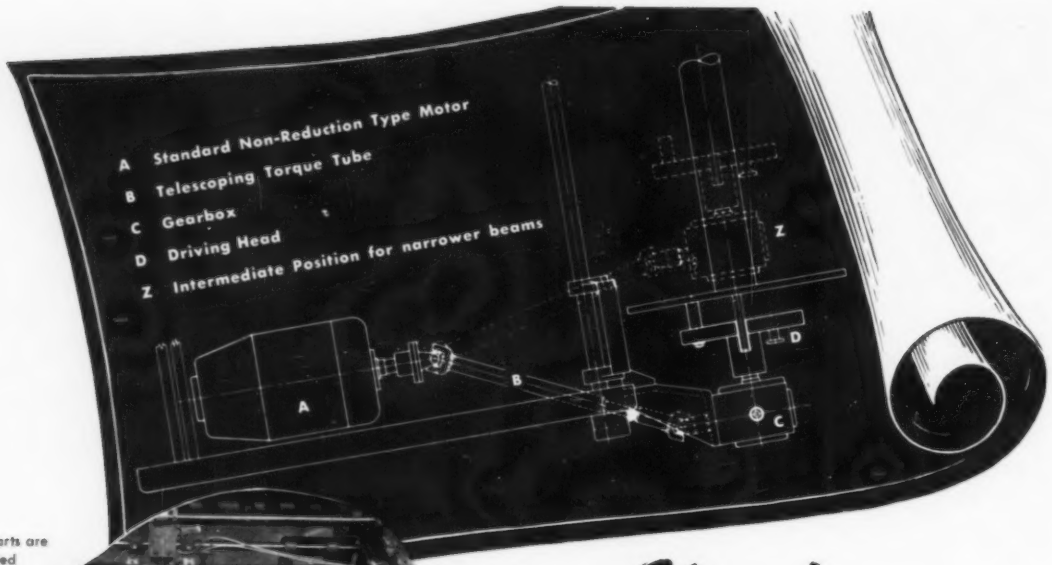
We colored the pegs by dipping them in bobbin enamel to agree with the color we wished our yarn to be marked. If more than one color per peg were desired, we colored the entire peg with a first coat, let it dry, then dipped the peg part way into the second color. We sometimes had pegs with three such colors.

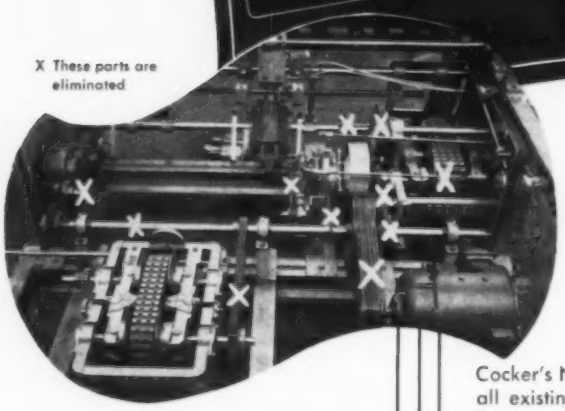
This worked well until we began installing umbrella creels. To offset the absence of boards, we installed a television cable stand-off at a reasonable height on the creel support nearest the chalk tray and hung the pegs from it.

Later, when we began to mark our yarns by shifts, we added a second peg bearing the shift color. This peg was made 2 1/4" long to help distinguish it from the original one.

The usual number of wisecracks followed the installation. In general employees took the system lightly, scoffed at the idea, etc. But one day the change man (he had been responsible for the correct gears and chalk being on the frames and was given the responsibility for the pegs also) found a frame with pegs indicating one color but which was supplied with chalk of another color. When it was proven that the pegs were correct, even he was sold.

CONTRIBUTOR No. 1048





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HOW OTHER MEN MANAGE

Discussion on cylinder drying efficiency

THE EDITORS:

I read the article in your July issue, p. 72, entitled "Efficiency in Cylinder Drying" with considerable interest.

I think many of the statements made in the article were not developed sufficiently and that many of your readers who may not be too well versed in thermodynamics might draw a false conclusion from some of those statements.

On page 72, fourth paragraph, it states: "The time of contacting . . . . . must not be too short." It is true that the total time of contact of the material on the hot surface of the cylinders is the decisive factor in drying, but the answer to high speed drying is repeated rapid contacts on successive high temperature cylinders.

It states in the next paragraph: "Actual cylinder surface temperature must be kept within the allowable temperature range, otherwise the fibers may get overheated . . . . " It should have been pointed out that as long as there is any appreciable amount of "free" water present in the fiber, its temperature cannot exceed 212 F, no matter how high the cylinder temperature may be. Therefore fiber cannot be damaged by high temperature on the cylinder surface until most of its moisture has been evaporated.

Under the heading "Basic Principles of Contact Drying" it states: "Dry steam, fully saturated or with very little superheat, should be used at lowest possible steam pressure, because the latent heat of saturated steam is greater at lower pressures, and is the only heat that matters for producing the hot cylinder surface."

Many readers might conclude from the above that a 15 psi steam pressure cylinder dryer is more efficient than one of, say 50 psi. The opposite is true. All conditions being equal, one cylinder operating at 50 psi steam will dry as much material as two cylinders operating on 15 psi steam, even though the latent heat of 15 psi steam is slightly higher than that of 50 psi. The reasons for the increased efficiency are:

a. Steam of 50 psi has more than twice the density of 15 psi steam, therefore double the heat release on a cylinder.

b. The higher internal temperature increases the rate of thermal flow through the cylinder wall.

c. The waste radiation surface is only half for the same amount of drying, when half as many higher pressure cans are used.

d. The power required to drive the higher pressure cylinder is only slightly more than half for the same drying capacity at 15 psi.

It might also be mentioned that

A salute to two with 111 years of textile experience

We have long known John F. Lehman of Paint Rock, Ala., and when one of us paid him a visit recently John had as a guest his older brother, George. They had just finished a two-man conference on plans for a new type of spinning ring. This may not seem unusual but for the ages of the individuals, for George is 86, John 82.

Maybe the person who coined the phrase "once you get lint in your head you never get rid of it" was not being merely funny. These two old timers represent 111 years of combined textile experience and still are full of plans for the industry's future!

George began work at the age of 10 and worked 58 years before he decided to change the subject. John began at the age of 7 and worked 53 before he called it quits. Then he went to work "for himself." For almost 20 years he built machines for straightening and grinding licker-in wire, installed them, and trained plant personnel to operate them. The two helped build the original Merrimack plant in Huntsville, Ala., which now is part of Huntsville Mfg. Co. They also "started up" the first carding and spinning in the new building.

Frankly, we are proud to have these two former superintendents "on board," for we feel that not often can a magazine boast of giving its readers the benefit of so much wisdom and experience in columns set aside for exclusive use of those who wish to add to How Other Men Manage.—The Editors

George Lehman John Lehman

Order & Reorder Scoreboard

ON THE UNIFIL® LOOM WINDER

MILL NAME	PLACED INITIAL ORDER	EQUIPMENT INSTALLED 1957	REORDER
Amerotron Corporation	●	●	●
Berkshire-Hathaway, Inc.	●		
Burlington Industries, Inc.	●	●	●
Cannon Mills Company	●	●	●
Cone Mills Corp.	●	●	●
Dover Mill group	●	●	●
Drayton Mills	●		
Judson Mills	●		
Laurens Mills	●		
Marven Looms, Inc.	●	●	●
Pansy Weaving Mills	●	●	●
Ponemah Mills	●	●	●
Richard Textiles	●		●
Riegel Textile Corp.	●	●	
Stanwood Mills, Inc.	●	●	●
Starr Mills Corp.	●	●	●
J. P. Stevens & Co., Inc.	●		
United Merchants and Mfrs.	●	●	●
Waumbec Mills, Inc.	●		
Weldon Mills, Inc.	●		
Woodside Mills	●	●	●
Mill A	●		
Mill B	●	●	
Mill C	●	●	●
Mill D	●		
Mill E	●		
Mill F	●		
Mill G	●		
Mill H	●		
Mill I	●		
Mill J	●		
Mill K	●		

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for the same drying capacity the first cost and maintenance of the dryer is only about half for the higher pressure operation.

There probably is always a measure of superheat in steam used for cylinder drying because it is usually reduced from higher pressure, which change releases heat and thus causes superheat. This superheat is an aid to increased thermal flow through the cylinder walls, but causes some trouble by flashing condensate in the syphon pipes and thus blocking steam traps. However, flash steam, air, and gases can be easily eliminated with proper knowledge of steam trap selection.

Film coefficient is not a theory. Once the film coefficient of any heat transfer equipment has been established, the heating surface required may be determined from formula. The oxide film both on the outside and inside of a cylinder wall present a greater resistance to thermal flow than those films mentioned in the article.

It is on account of these various films that the over-all heat transfer rate of stainless steel cylinders is practically on a par with that of copper cylinders, even though copper has a heat conductivity twenty-five times greater than that of stainless steels of the austenitic type.

It is impossible to eliminate the condensate film on the inside of a cylinder wall, but it can be reduced to a minimum with *accurately* constructed cylinders and syphon pipes.

Undoubtedly, blowing hot air between dryer cans would increase the drying rate, but heating and blowing air is rather expensive as proven by air dryers themselves. Air movement is provided on can dryers by the chimney effect of rising hot air.

A vertical stack of cans has more chimney action than a horizontal set and so is therefore somewhat more efficient. It is of the greatest importance to exhaust the moist air from a cylinder dryer and the room where it is located as no fiber can be drier than its surrounding atmosphere.

Basically, what Mr. Walter wrote is true, but I think he should have expanded some of his statements.

CONTRIBUTOR NO. 1070

THE EDITORS:

When I stated in my article that dry steam, fully saturated or with little superheat, should be used at lowest possible steam pressure for drying cylinders, I wished to convey rather that an unnecessarily high steam pressure or high superheat should be avoided for reasons of steam and fuel economy.

It is obvious of course that a steam pressure of 50 psi will produce a hotter cylinder surface and would dry any material much more quickly than a cylinder having a steam supply pressure of only 15 psi. The point is that there is an optimum steam pressure which may be very near the critical drying temperature of a material, which optimum steam pressure will give best drying results and at the same time use as little heat as possible in the circumstances.

For example, if the critical drying temperature of a material is slightly above the temperature corresponding to saturated steam

of 15 psi pressure, it would be advisable to use dry saturated steam for a 15 psi supply pressure at the inlet to the drying cylinder. If this steam is superheated, drying would not be accelerated because the latent heat of saturated steam is the only factor which matters as regards condensation inside the drying cylinder.

Should the material in question be able to stand a steam supply pressure of 50 psi it is of course advisable to use the higher steam pressure, but here again any superheat would be of no substantial importance, because it is only the latent heat of steam at 50 psi pressure which matters for heat transfer from the condensing steam inside the cylinder wall to the actual cylinder surface.

LEO WALTER

More about shuttles that don't thread

THE EDITORS:

This is a suggestion intended primarily for CONTRIBUTOR NO. 9089, and I especially refer to the pictures on p. 134 of the May, 1958, issue.

The shuttle appears to be very heavily furred. My experience on 14s cotton filling is that only two short strips (two inches) of rabbit fur inserted opposite to and level with the quill nose are necessary. In fact, I found that most filling troubles were due to such factors as picking, checking, etc., and were not particularly related to furring.

The 2/8s viscose filling will have considerable rigidity, and my impression from the photographs is that the shuttle, when reaching the off or feeler end of the loom, will have drawn the filling so taut (due to the heavy furring) that there is insufficient slack to permit the second stage of the threading process—assuming of course that stage one of the process is completed on the first pick after transfer.

If stage one is not taking place, can you tell me if the direction of curl of the threading loop near the quill nose is suitable for the direction of the quill unwind?* (It has been ten years since I've been in contact with automatic looms, and I must apologize for not giving the correct nomenclature to the various parts.)

While this suggestion is elementary, I have found in practice that battery fillers, unless instructed, do not appreciate that the filling must be placed in the proper notch of the thread guide. The correct angle at which the filling end is placed in the guide is carefully determined to permit threading as the lay backs away from the magazine following transfer. If the end is placed in the wrong notch, naturally the shuttle eye often misses the end on the first pick after transfer.

CONTRIBUTOR NO. 9089 may find it worthwhile to experiment with this angle.

CONTRIBUTOR NO. 1075
(India)

* It is.—The Editors

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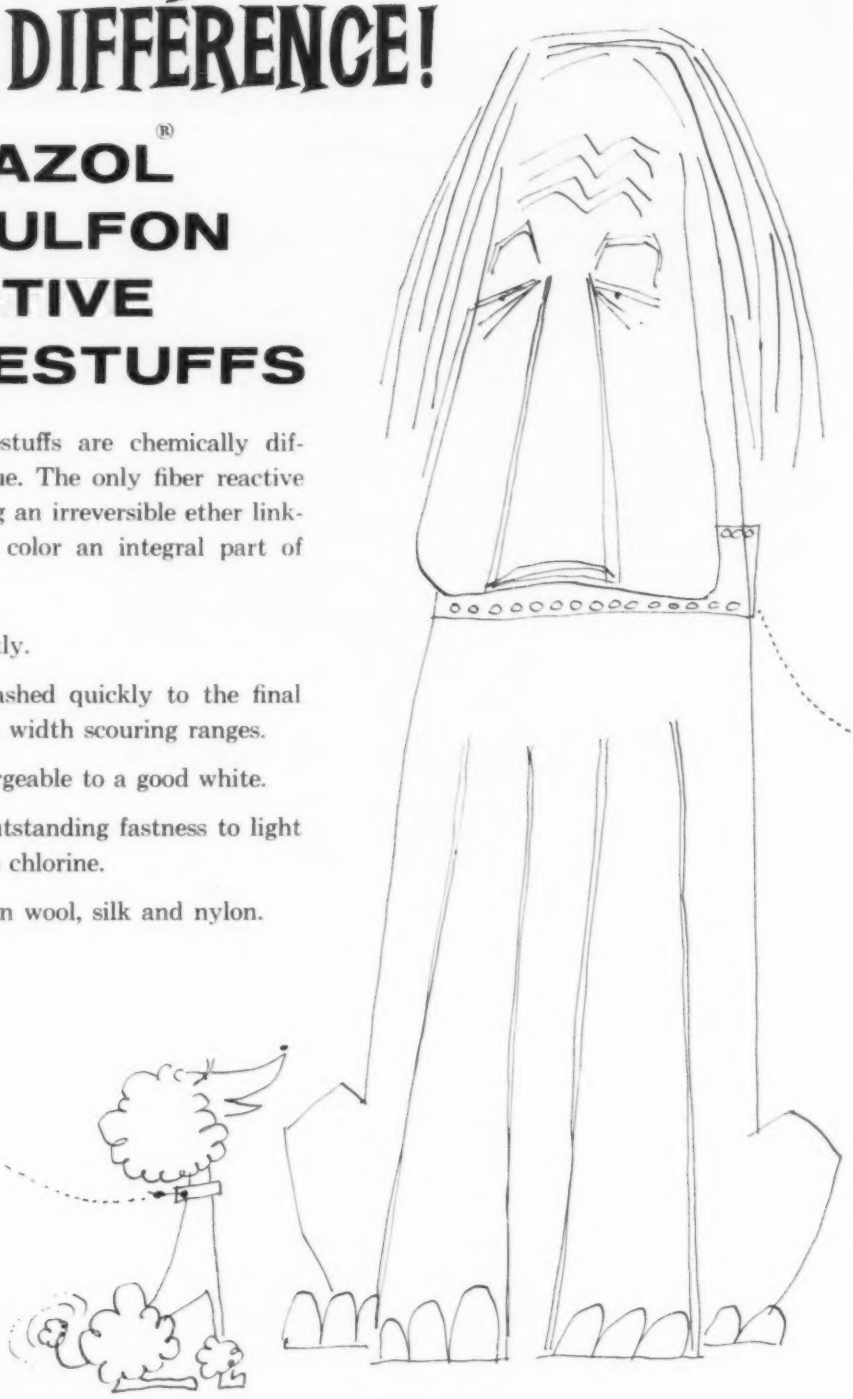

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Quill size change requires close study

(This is another reply to Contributor No. 1025, who (in the July, 1958, issue, p. 109) wished mill men's reactions to the idea of changing from 8 ¾" quills to 8" quills in an effort to get more loom speed. Numerous replies were printed in the August issue, beginning on p. 139.—The Editors)

THE EDITORS:

In replying to CONTRIBUTOR No. 1025, I'll not try to reveal all data he requests regarding the performance of 8" quills as against 8¾" in X-2 looms. But the writer will say that he had experience on X and XL model looms on this matter before the day of the X-2 loom.

The longer quill has its advantages, but it has a lot of disadvantages too. CONTRIBUTOR No. 1025 knows many of them already, so it isn't necessary to list them.

Conservative practices — being anxious not to explore too rapidly —caused this writer to doubt all that was claimed for the longer quills, including 10" and 12" ones. But the type of filling used almost demanded longer quills to reduce the waste.

We went along with that agreeably, and we had to cut the loom speeds, but our efficiency improved enough to offset that. So we on the overseer level had to see the sensible side.

The cost of changeover in present looms will hardly be justifiable, but getting a molded shuttle with a larger cavity will allow one to wind a larger diameter quill (more yarn per package), and at the same time increase the loom speed about 5 picks per minute.

This will mean fewer battery fillers, fewer quills to be wound and cleaned, and reduced waste. Looms per weaver may be slightly increased after concrete studies: the same loom-fixer loads kept.

Quality will of course be potentially better with fewer filling changes. Repair costs should not increase, and fewer broken quills should result.

This is the big item of loss in longer quills. Loom stops should be less due to filling breaks if my presumption that you are using rewound instead of direct spun weft yarn is correct.

The changeover costs of quills, extra pirns or quills to be wound or doffed, battery parts, box plates, etc., will require a lot of extra cloth to be woven (higher speed and efficiency) before one can show a return.

CONTRIBUTOR No. 1072

Hammer handles for rough duty indeed

THE EDITORS:

A hammer handle which will last a lifetime, I should think, is made of two lengths of pipe of different diameters. The longer handle in one instance is made of ¾" pipe welded into the hammer head. The opposite end of the handle is grooved to receive a length of ½" pipe which is welded into place.

The combination of two pipe diameters slipped together in this manner gives great strength and prevents the handle from being too large for the hands.

CONTRIBUTOR No. 1017

Need an extra $100? Who doesn't? Enter TI's Kink Contest!

Send your entry now! This contest ends December 15, 1958

Every kink, short-cut, time-saver, or quality improvement suggestion entered in the contest will be paid for immediately upon acceptance. The $100 award will be made as soon as all entries are adjudged.

The contest rules are simple:

► All contributions must be postmarked not later than midnight, December 15, 1958.

► No limit to the number of entries an individual may submit in any one contest.

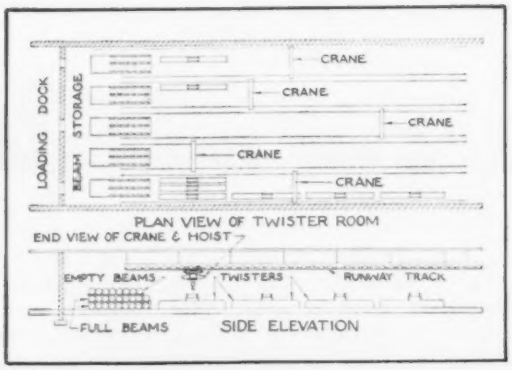
► All entries paid for upon acceptance — no waiting. Extra payment for photographs that are usable. Extra consideration is also given kinks accompanied by legible pencil sketches or drawings.

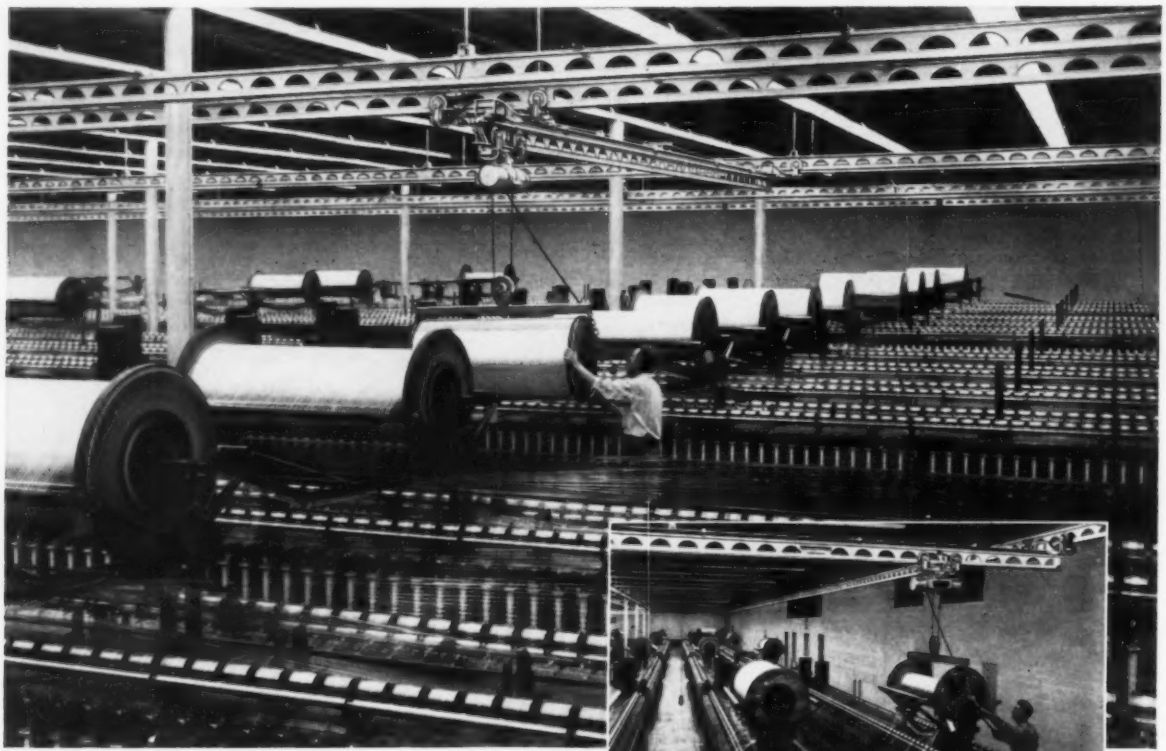
► Entries must not have been published previously and must not be submitted to any other publication.

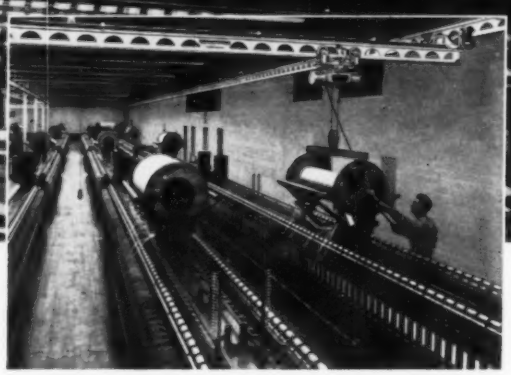
Send your contest entry to:
Editors TEXTILE INDUSTRIES
806 Peachtree St., N. E.
Atlanta 8, Georgia

Handling 36" Beams to Twisting Machines

Easy rolling hand-propelled Tramrail cranes with electric hoists of one ton capacity provide complete handling service for the entire twister room and at railroad dock and in beam storage. Beams are up to 36" diameter by 58" long.







THERE are two practical ways of handling heavy beams to twisting machines with creels on top: either the old slow method using cumbersome portable floor gantries, or the modern efficient method employing an overhead track or crane system. Progressive up-to-date textile mills have found the latter method so advantageous that overhead handling equipment has been specified for twister rooms in nearly every recent plant built for this purpose.

In the ultra-modern twister room of a prominent Southern mill, a Cleveland Tramrail system handles 36" diameter rayon beams from railroad dock to storage, thence to twisting machines. Empty beams are returned on the same equipment.

It is a simple easy task for a man without previous experience with Tramrail equipment to convey a beam and set it in position on a twisting machine. Where required two or more beams can be mounted on a twister frame with equal ease. Tramrail equipment eliminates the need of floor trucks entirely, as it transports the beams directly from storage to twisters without rehandling. By handling beams, and all other materials overhead, the chief source of floor wear and damage is eliminated.

Write for free Engineering and Application Booklet No. 2008. Packed with valuable information.

CLEVELAND TRAMRAIL

Overhead Materials Handling Equipment

CLEVELAND TRAMRAIL DIVISION • THE CLEVELAND CRANE & ENGINEERING CO. • 2865 E. 287 ST. • WICKLIFFE, OHIO

"STAR DUST"
that brightens
Sales
FAIRTEX® YARNS
METALLIZED AND FOIL MYLAR* • SUPPORTED METALLICS
Upholstery and drapery fabrics containing the shining magic of Fairtex with Foil or Metallized Mylar* or Fairtex Butyrate Metallic Yarns sell better.
Fairtex metallic yarns are non-tarnishing and can be safely washed, dry-cleaned or scoured. The wide range of style-wise Fairtex colors is a designer's and decorator's delight.
Fabrics woven with Fairtex Metallics stop the eye and start the sale!
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3032

CHARLOTTE: LANIER BRANSON, JR., & J. E. MacDOUGALL, JR., 1808 LIBERTY LIFE BLDG. • NEW YORK: ROBERT NAPIER, 51 E. 42ND STREET • JENKINTOWN, PA.: WILLIAM A. POPP & ASSOCIATES, THE BENSON—EAST • CHICAGO: WILLIAM NAPIER, 3555 PETERSON AVENUE • ATLANTA: ROBINSON TEXTILE CO., 3133 MAPLE DRIVE N. E.

major supplier of chemicals for the textile industry

CARBON BISULFIDE exceeds 99.99% purity. Stauffer was the first—is still the largest—producer of this essential chemical. Shipped in tank cars of 8000 and 10,000 gallons from Bentonville and Roanoke, Va., Lowland, Tenn., LeMoyne, Ala., Chester, Pa., and Perry O.; in 5, 10 and 55-gallon drums from LeMoyne and Richmond, Cal.

SODIUM HYDROSULFIDE in aqueous solution of high purity and highest practical concentration is shipped in tank cars of 8000 and 10,000 gallons from Chester, Pa., Roanoke, Va., Lowland, Tenn., and Richmond, Cal.; in 55-gallon drums from Chester and Richmond and in tank trucks from Richmond.

CAUSTIC SODA of 50% and 73% liquid Rayon Grade is shipped in tank cars of 8000 and 10,000 gallons from Niagara Falls, N.Y.

SULFURIC ACID is available in commercial grades of 77.67% to 122.5% H_2SO_4; as Oleum of 15% free SO_3 to 100% liquid SO_3, and as regenerated, water-white 98% H_2SO_4. Shipments in barges, tank cars, tank trucks, drums and carboys from many points in the South, Mid-west and West.

For continuous, dependable, flexible supplies of textile chemicals ... make your arrangements with Stauffer.

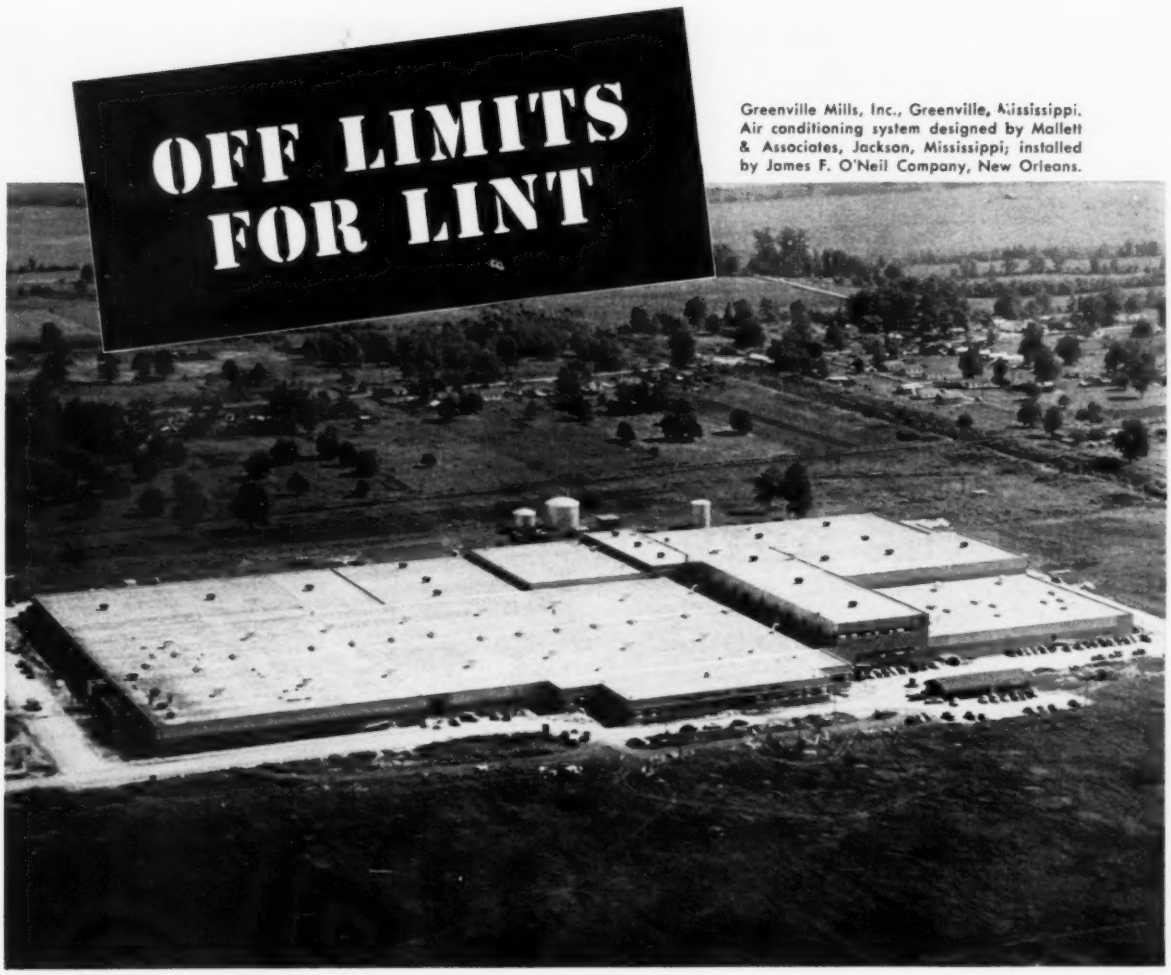
STAUFFER CHEMICAL COMPANY

380 Madison Avenue, New York 17, N. Y.

Prudential Plaza, Chicago 1, Ill.

636 California Street, San Francisco 8, Cal.

Stauffer CHEMICALS SINCE 1885



Greenville Mills, Inc., Greenville, Mississippi. Air conditioning system designed by Mallett & Associates, Jackson, Mississippi; installed by James F. O'Neil Company, New Orleans.

AAF Auto-AIRMAT filters guard against lint at Greenville Mills plant (a subsidiary of Mohasco Industries, Inc.)

Lint has no way to turn in this modern plant of Greenville Mills, Inc., at Greenville, Mississippi. Wherever it is produced, it is immediately wrapped up by AAF's automatic lint filter—the Auto-AIRMAT. Auto-AIRMATS are installed on 24 air conditioning systems, cleaning 792,000 cfm of air.

Auto-AIRMAT is the *only* filter designed to remove lint fibres from the air and clean itself at the same time! Airmat filtering material, winding from roll at top of unit, moves automatically down the face of the filter, collecting lint all the way—re-winds into disposable roll at bottom.

If you have a lint *problem*, get the facts on the *lint filter*—AAF's Auto-AIRMAT. Call your local AAF representative or write for Bulletin 234.

AAF Filters and Precipitators

AAF Dust Control Equipment

AAF
herman nelson

American Air Filter
COMPANY, INC.

275 Central Avenue, Louisville 8, Kentucky
American Air Filter of Canada, Ltd., Montreal 9, P. Q.

BETTER AIR IS OUR BUSINESS

Herman Nelson Unit Heaters

Illinois Heating Specialties

No. 9 in a series—how your Du Pont salesman is backed by many sales-building activities including Fiber Research, Technical Service, Fabric Development and Merchandising.

TV's master salesmen now sell Du Pont fibers to the millions!

Here you see Steve Allen and Du Pont's Henry Froehling, Textile Fibers Merchandising Director, checking over the storyboards (the TV counterpart of a script) which will help Steve sell Du Pont's better-living fibers to millions of viewers on his NBC Sunday-evening show.

To help sell Du Pont fibers day after day in the biggest advertising program in textile history, Du Pont has lined up a battery of master salesmen. In addition to Steve Allen, there's Dave Garroway, whose NBC "Today" program rates consistently as one of TV's most popular daytime shows; Douglas Edwards, CBS-TV's leading news commentator; Jack Paar, host of the NBC week night "Jack Paar Show"; and Arthur Godfrey, on the CBS radio network.

Added to this impressive array of talent are intensive spot TV and radio in key cities, scheduled to create maximum retail impact at peak fall and spring sales periods and to give Du Pont fibers saturation coverage in leading markets.

Maintaining its leadership in print advertising, Du Pont will continue to sell its fibers with advertisements in major magazines (mass magazines, women's service magazines, fashion magazines, home magazines, men's magazines), in Sunday supplements—wherever your customers look.

Broad in scope, yet pinpointed to the local buying level, this big new advertising program will help increase demand . . . build broader markets for all products made with Du Pont fibers.

This dramatically increased advertising program is just one of the ways Du Pont works to increase the market for its fibers and thus benefit you, its customer. Through your Du Pont salesman you, as a customer, also have access to a range of technical and merchandising information unique in the textile industry.

From raw fibers to retail sales

. . . Du Pont builds profits for you

PRODUCT and PROCESS NOTES FROM DU PONT

New type of polyester fiber—"Dacron" Type 64 A new type of "Dacron"* polyester fiber has been introduced to make possible greater fabric versatility in worsted—and rayon—type fabrics for men's, boys', women's and children's wear. Called "Dacron" Type 64, the new fiber has been engineered to permit styling of a new broad range of fabric types: sharkskins, Bedford cords, sheen and plain gabardines and other types characterized by a surface nap, such as mill-finished and unfinished worsteds, basket weaves and selected worsted—and rayon—type flannels. It is intended for use on the worsted and American, or rayon, spinning systems.

"Dacron" Type 64 shows marked improvement in resistance to pilling, a characteristic that permits production of the new fabric types. Regular "Dacron" polyester fiber has somewhat higher tenacity and abrasion resistance, but the new fiber has double the strength and greater abrasion resistance than the types of wool used in apparel. It offers greater dyeing versatility in that disperse colors and selected cationic dyes can be used. Ask your Du Pont salesman for more information about "Dacron" Type 64.

New low-shrinkage nylon yarns. These yarns, designated as Type 105, 205 and 305, have a lower and more uniform shrinkage compared with regular nylon yarns and are sold as zero twist on non-returnable tubes. Economic benefits are made available to the processor because of the improved uniformity of finished fabrics and the elimination of some preparatory processing steps in certain applications.

Among the many advantages of this new yarn for improved uniformity are: elimination of pirn taper barré, improved dyeing uniformity, reduction in filling bands, fewer spacing streaks, wider finished fabrics and improved yarn delivery from package.

Broadened acetate tricot yarn put-ups. Just introduced! 40 denier acetate on zero-twist tubes or beams. This is the finest commercially obtainable acetate yarn for tricot knitting. It's designed specifically for superior lingerie fabrics made on fine-needle, 32-gauge knitting equipment. And it's available on 42″ beams with up to 1,360 ends per beam.

Tube size has been increased to an 8-pound, single-segment package for more economical warping; and beams are now being made available with 30″ flanges which hold approximately twice the yardage of regular 21″ flange beams.

Technical Information Bulletins. These bulletins contain detailed, practical information on Du Pont product and process developments. They cover fiber properties, mill processing, dyeing, finishing and fabrication. Refer to your copies frequently; they can save you time and money. To be sure you have all the bulletins you need—check with your Du Pont salesman or Technical Service representative.

*"Dacron" is Du Pont's registered trademark for its polyester fiber.

Enjoy the "Du Pont Show of the Month" on CBS-TV

DU PONT

REG. U.S. PAT. OFF.

BETTER THINGS FOR BETTER LIVING ...THROUGH CHEMISTRY

MOYNOS®

even pump non-pourable pastes!

. . . and move corrosives without excessive wear!

Moynos can pump any textile liquid that can be forced through a pipe, even if they're highly viscous or corrosive.

A screw-like rotor revolving in a double threaded stator forms progressing cavities which move all fluids smoothly through the pump, including thickeners or starch size. Corrosive liquids like acid solutions, dye and chlorine do not cause internal wear, because the rotor and stator can be made of special resistant materials. Moyno is the only pump that can satisfactorily handle caustic alkali solutions without causing foaming or aerating.

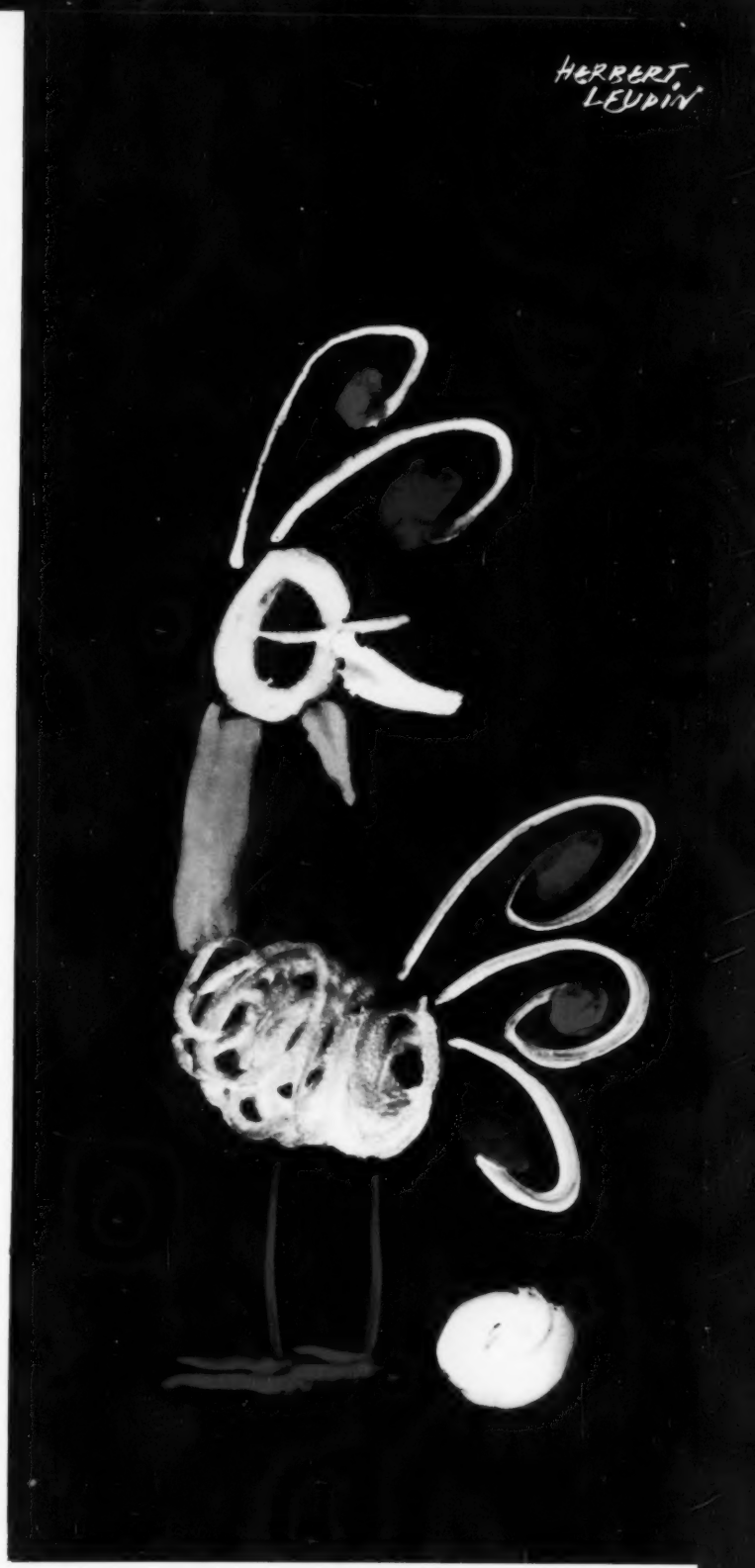
Many textile mills have drastically cut downtime on mercerizing and sizing machines by installing Moynos to replace rotary pumps which wear quickly and lose capacity and suction characteristics.

Moynos are available in capacities up to 500 gpm; pressures up to 1000 psi. No doubt there are many steps in your processing flowsheet where Moynos can cut costs and improve liquid handling. Write for Bulletin 30TI.

R&M

ROBBINS & MYERS, INC.

SPRINGFIELD, OHIO — BRANTFORD, ONTARIO



Have you tried the new SANDOZ Lanasyn procedure for fast colors on wool?

SANDOZ Research—working to develop new dyestuffs, chemicals, and procedures—now offers a closer approach to ideal wool dyeing. The method employs the Lanasyn Dyes with a new SANDOZ leveling agent, Lyogen SMK, in a buffered formulation.

Result: The application of the faster, premetallized colors—even in pale shades—dyed level and with good penetration, and with minimum detriment to appearance, handle, and life of the wool . . . a benefit to the mill through better handling in processing and spinning . . . a benefit to merchandiser and consumer, through better quality.

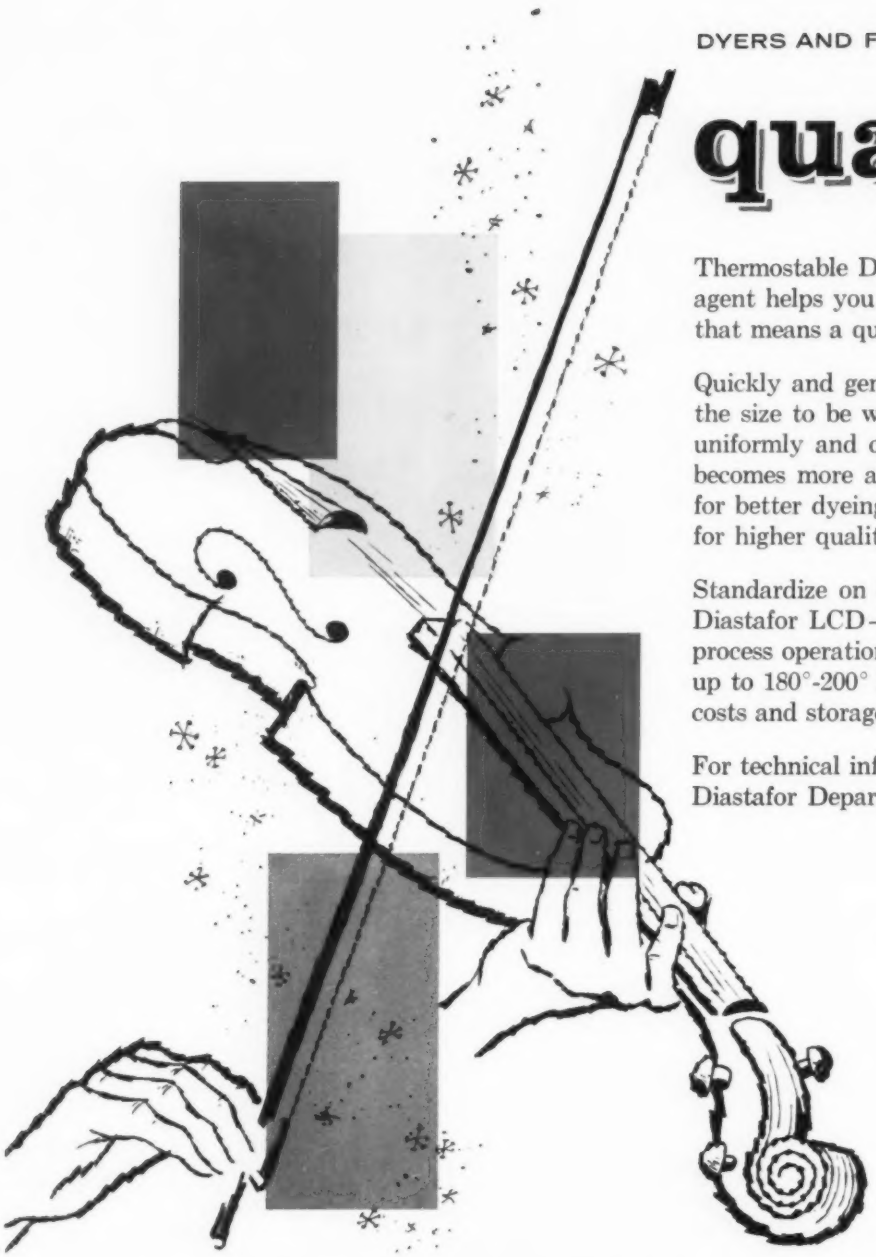
Ask us about it. SANDOZ, INC.,
61-63 Van Dam Street, New York 13, N. Y.
ALgonquin 5-1700.

District Offices: Charlotte, Cincinnati, Fair Lawn, N. J., Hudson, Mass., Los Angeles, Philadelphia.

SANDOZ

THINKS AHEAD WITH TEXTILES

SANDOZ



DYERS AND FINISHERS GET

quality

Thermostable Diastafor desizing agent helps you get the good prepare that means a quality finish.

Quickly and gently Diastafor permits the size to be washed away uniformly and completely. Cloth becomes more absorbent– for better dyeing and bleaching– for higher quality finished goods.

Standardize on high quality with Diastafor LCD– for fast continuous process operations at temperatures up to 180°-200° F. Saves time, costs and storage space.

For technical information, address: Diastafor Department.

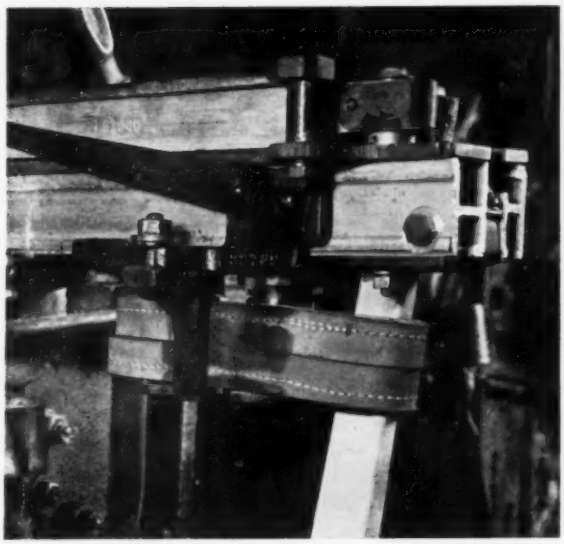
with **DIASTAFOR®** *desizing agent*

STANDARD BRANDS INCORPORATED • 625 MADISON AVENUE • NEW YORK 22, N. Y.

NEW PRODUCT PARADE

Machines and Equipment . . . Supplies and Services . . . Dyes and Chemicals . . . Books

Please note: Claims made in all of these announcements of new developments are of necessity based upon information furnished by the respective suppliers.—The Editors.



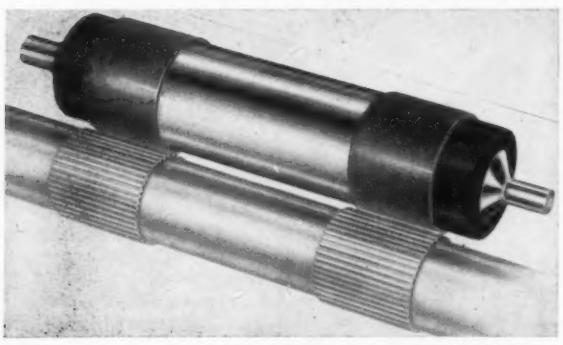
Twin check straps offer long service

Designed to replace conventional endless check straps, Twin-Checks distribute wear evenly over both straps as they follow through the arc of the picker stick. Prestretched, they require little or no adjustment, are designed for long service life, and are made of perfectly matched endless lengths of leather.

J. E. Rhoads & Sons, P. O. Box 71, Wilmington 99, Del.

Do you want more data? Write ◂ or use card on page 199; list L-101

Top rolls weighted magnetically

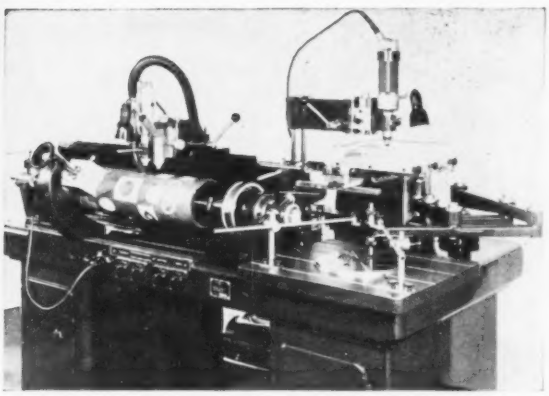


Magnetrol, a system of obtaining roll pressures in the drafting element by using magnetic top rolls, does away with all auxiliary pressure equipment and lubrication in the drafting zone. Cleanliness in the drafting zone is easily maintained through the absence of oil and so many components formerly associated with roll weighting.

Saco-Lowell Shops, 60 Batterymarch St., Boston 10, Mass.

Do you want more data? Write ◂ or use card on page 199; list L-102

Engraves printing rolls in the plant



A pantograph-type machine for engraving printing rolls from a flat pattern has been developed by the German firm of Michael Kanph. It engraves copper, rubber, and plastic rolls for printing or decorating textiles, plastics, paper, etc.

In using the machine, the design or art-work to be engraved is placed on the machine table, and as the arm of the pantograph follows the design, a 45,000 rpm cutting tool cuts away those areas of the roll surface not required in applying the design to the material to be printed.

The de Florez Co., Inc., 200 Sylvan Ave., Englewood Cliffs, N. J.

Do you want more data? Write ◂ or use card on page 199; list L-103

A grease especially suited for looms

A grease especially developed for applications where high pressures and shock loads exist, such as in loom bearings and on loom cams, is exceptionally good on finishing machines where heat and water are encountered. Another recommended application is in electrical motor bearings throughout the textile mill.

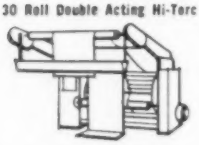
Called Gulfcrown Grease E. P., it has residual antiweld properties and adhesive characteristics that also make it ideal for applications where infrequent greasing is practiced. It is pumpable at below-freezing temperatures, at high pressures the oil and soap base structures do not separate. Available in three N.L.G.I. consistencies, Nos.

A HI-TORC NAPPER and BLEND-MATIC ROLL GRINDER

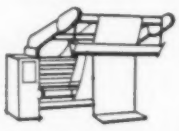
—these <u>two</u> provide maximum napping efficiency.

30 Roll Double Acting Hi-Torc

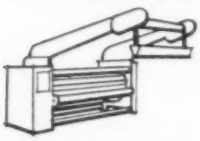
There are 5 Gessner Hi-Torc Nappers



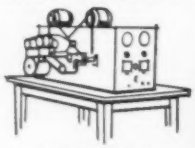
24 Roll Double Acting Hi-Torc



24 Roll Single Acting Hi-Torc



24 Roll Knit Goods Hi-Torc

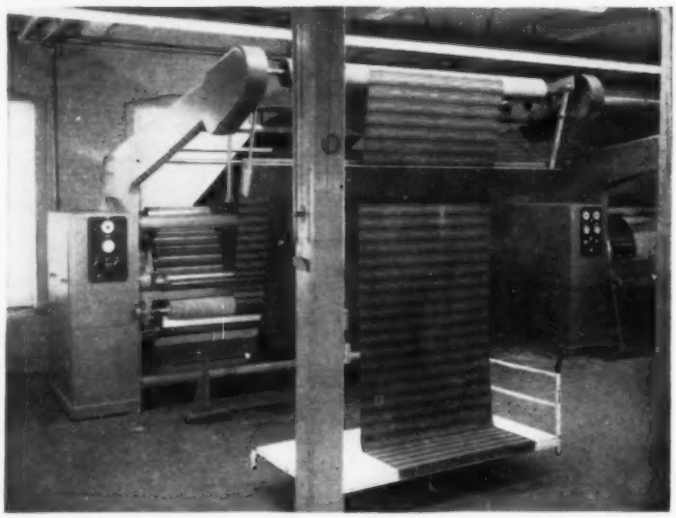


Laboratory Hi-Torc

Gessner manufactures a Hi-Torc napper for every fabric and every finish. There are five in all — 30 Roll Double Acting Hi-Torc, 24 Roll Double Acting Hi-Torc, 24 Roll Single Acting Hi-Torc, 24 Roll Knit Goods Hi-Torc, Laboratory Napper. Each one embodies Gessner's exclusive, variable, measured and recorded torque drive or napping energy.

Higher cloth speeds are attained, or production increases ranging up to 400%, and with finishes seldom before equalled in variety and quality.

The new Gessner Blend-matic, for the first time, regrinds napper roll wire to the exact specifications demanded by modern high-speed nappers. An internal grinding wheel and a swivelled working head, which follows the spiral wind of the wire, shape each wire to a long, smooth, blended point required for precision napper operation.



24 Roll Single Acting Hi-Torc Napper

Blend-matic Roll Grinder. Inset shows internal grinding wheel.

DAVID GESSNER CO.

WORCESTER, MASS.

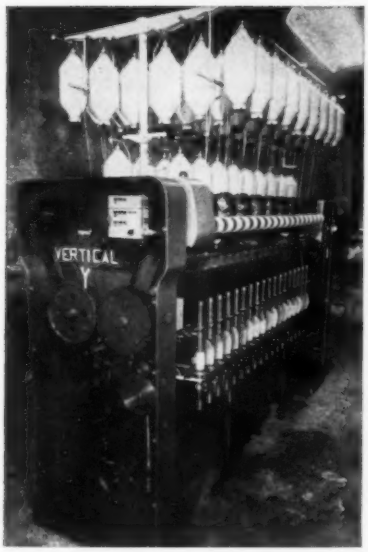
Southern Representative: Richard L. Bernard, 222 Piedmont Bldg., Greenboro, N. C.
Western Representative: E. G. Paules & Co., 1762 West Vernon Ave., Los Angeles, California
Canadian Representative: W. J. Westaway, Montreal, Quebec; Hamilton, Ontario

0, 1, and 2, all of which have good oxidation, mechanical stability, and rust protection characteristics (No. 0 and No. 1 are especially recommended for central grease systems), it offers these other advantages: (1) a proper consistency grade for multi-purpose application in nearly every type of plant; (2) ability to lubricate when unusually heavy bearing or gear loading conditions exist; (3) excellent resistance to oxidation and mechanical breakdown due to hard usage; (4) satisfactory performance at temperatures as high as 250 F, even higher if replaced frequently; (5) and resistance to the washing action of water and protection against rust in the presence of water.

Gulf Oil Corp., P. O. Box 1166, Pittsburgh 30, Pa.

Do you want more data? Write ◂ or use card on page 199; list L-104

"Lean" and effective spinning frame



Only 24" wide, the Vertical Y spinning frame is completely equipped with antifriction bearings on every moving part. Equipped with antifriction vertical straight line drafting from the creel to the traveler, it will double creel 12" x 7" bobbins or can be converted to use sliver from cans, drafting as high as 200. Or it can be creeled from 12" x 7" bobbins and draft as high as 75. Other features: air flow (single or double) umbrella creels; vacuum cleaning; improved control rings; steel ring rails; and 12" stroke. A chain drive eliminates 50 per cent of conventional gearing.

F. A. Young Machine Co., York Rd., Gastonia, N. C.

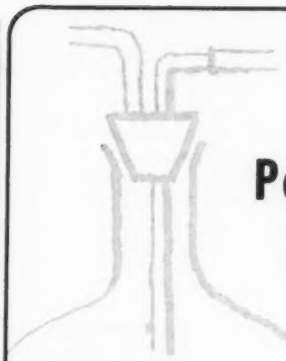
Do you want more data? Write ◂ or use card on page 199; list L-105

Tensile tester also gives time-to-break

The CRE tester makes ultra-precise, electric-weighing tensile evaluation of all materials in the range of capacities from 0 to 0.05 pounds to 0 to 1000 pounds or 0 to 25 grams to 0 to 500 grams, held by any of some 150 available clamps and holding fixtures and in conformance with ASTM, ISO, and industry methods.

It is suitable for all textiles and constructions: single fibre or filaments; yarn; thread; cords; rubber thread; webbing; duck; ball burst of knitted fabrics; tear test; seam construction; and lamination (adhesion) of textiles to other materials. The inertialess electric weighing provides sensitive and precise evaluations.

Laboratory versatility is provided by adding any of the following features: (1) two-speed drive; (2) low range



The Finest Polyethylene Emulsion on the Market

Moropol 700

Moropol 700 performs wonders in crush resistants, wash and wear formulations, and in shrink control finishes. Here are some of its valuable features.

Non-Yellowing Neither the emulsifier nor the polyethylene contain nitrogen. Fabric will not yellow with age or heat.

Improves Fabric The use of Moropol 700 increases tear and tensile strength — and seam efficiency — in resin treated fabrics. It eliminates embrittlement, increases abrasion resistance, and improves crease recovery and hand.

100% Effective Moropol 700 contains no waxes or loading agents. Requires less to do the job.

Moropol 700 is compatible with acids, alkalies, cationics, and metal salts. It is miscible in water in all proportions — freeze/thaw stable — and has a particle size of less than 1/10 micron. Moropol 700 will not separate, settle-out, or cause rancidity in storage.

The abrasion resistance, durability, sewability, and glove-like touch of Moropol 700 recommend its use as a self-finish on sheetings and many other fabrics.

Moropol 700 is the leader in the fine family of Moretex Polyethylene Emulsions.

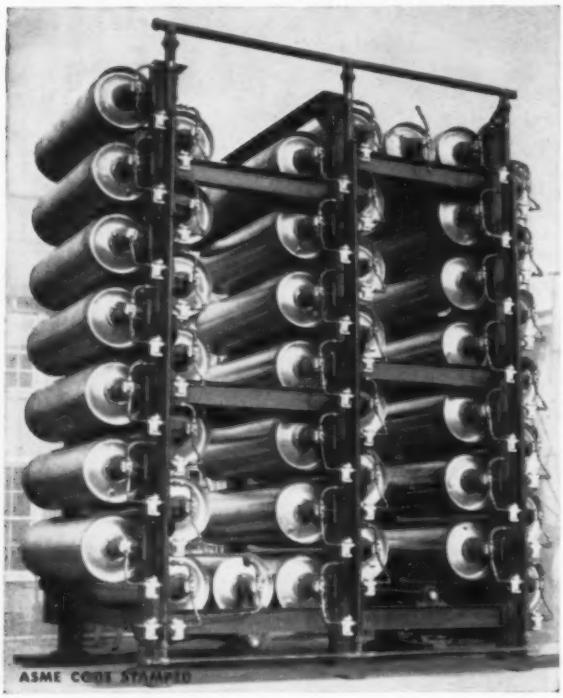
For the best for any purpose call Moretex.

MORETEX Chemical Products, INC.
ESTABLISHED 1908
MANUFACTURING CHEMISTS SPARTANBURG, SOUTH CAROLINA

PROVEN SUPERIOR

In actual day to day operation where the real worth of machinery is tested, Sims new Stainless Steel 75 psi reversed dished head 44 Dry Cans* are proven superior. They require less horsepower . . . are easier on bearings . . . and save floor space with no loss in drying surface. And, the chain drive is on one side of the can, while the steam fittings are on the other side . . . permitting maintenance of the drive without time lost waiting for steam pipes to cool.

Furnished Teflon-coated if desired.



Fabricated and installed at Lanett Bleachery and Dye Works, Lanett, Alabama by Sims Metal Works.

FOR ECONOMY AND QUALITY

Our modern and progressive metal-working shops, our skilled craftsmen, our know-how—these are guarantees of quality. For custom tailoring of stainless steel, call, wire, or write *now*.

*U. S. PAT. OFF. NO. 2779104

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Fabricators Since 1928

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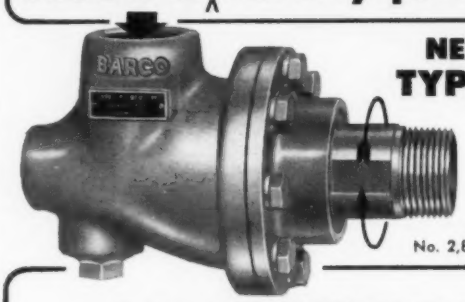
Harley D. Hohm, Inc., 128 Buist Ave., Greenville, S. C.
Friday Textile Machine & Supply Co., Gastonia, N. C.

Need a Better rotary joint?



NEW TYPE C

Patent No. 2,836,439

-it's BARCO!

For countless applications, Barco's new Type C Rotary Joint will give you the best operating records you've ever had—*and for LESS COST!*

"CRACK-FREE" CHROME PLATED SLEEVE—A standard Barco feature. Minimizes corrosion, friction, wear. Stainless steel spring also standard.

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WIDE SPACED BEARINGS—Two, instead of one . . . increased bearing area. No lubrication required. Lowest friction.

200 P. S. I. STEAM RATING—Heavy duty service at *no extra cost*. Eight sizes, ½" to 3". *Send for new Catalog 310 today.* **BARCO MANUFACTURING CO., 574M Hough Street, Barrington, Illinois.**

Watch lint, oil, smut

vanish

from looms and motors

Oakite "117", the new cold cleaning solvent, is perfect for textile mills. Brush it on or spray it ... blow it off or wipe it – and watch how soils literally vanish from looms, motors, twisters, reed parts and other textile equipment. Especially effective on combinations of lint, grease, oil and smut.

Fast dry-down, high flash point, non-conducting – no wonder so many mill people say Oakite "117" is just what they've been looking for. Write for special Service Report giving details, to Oakite Products, Inc., 26C Rector Street, New York 6, N.Y.

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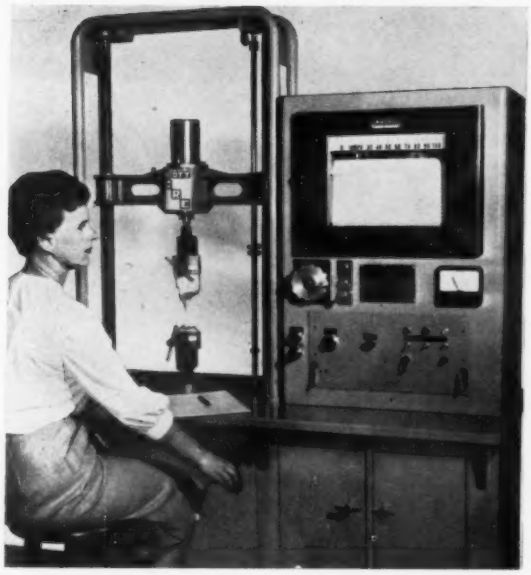

Scott Testers' constant-rate-of-extension tensile testing machine.

variable-speed drive, including tachometer and infinite speed selector wheel; (3) infinite range variable speed drive including tachometer, high and low range control, and speed selector wheel; (4) range control selector; (5) time-to-break indicator; and (6) pipping device.

Constant extension of the specimen is accomplished by an upwardmoving crosshead that pulls the top holding clamp from lower fixed clamp at uniform speed (any rate, as selected, from 0.05" to 20" per minute) to a length of extension up to 70" of crosshead travel. The automatic electric weighing system measures the resultant force and the registration of the stress-strain curve is permanently charted on a visual recorder. Ratio of chart travel to crosshead upward travel may be varied to magnify the stress-strain curve as much as 400 to 1, permitting analysis in the most minute detail of ultimate tensile, yield point, elastic limit, and other variables.

After inserting the specimen in the clamps, the operator depresses the clutch lever of the mechanical gear box, and the test proceeds by the upward motion of the upper clamp, stressing the specimen against the fixed bottom clamp. Upon completion of the test, the upper clamp returns automatically to the starting position and stops there—return speed is rapid.

Scott Testers, Inc., 60 Blackstone St., Providence, R. I.

Do you want more data? Write ☁ or use card on page 199; list L-106

Loom picker with 10 lives

A new synthetic drop box picker giving up to ten times the wear of conventional pickers, and known as the Golden Thorobred, requires no oils or dressings, extends picker stick life, and offers a cushioning action that greatly reduces shuttle wear. Made from synthetic elastomer, the pickers help diminish noise level on looms because of the shock absorbing qualities of the material. They can be more easily adjusted, resulting in additional

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Identification
on All Synthetics—Blends

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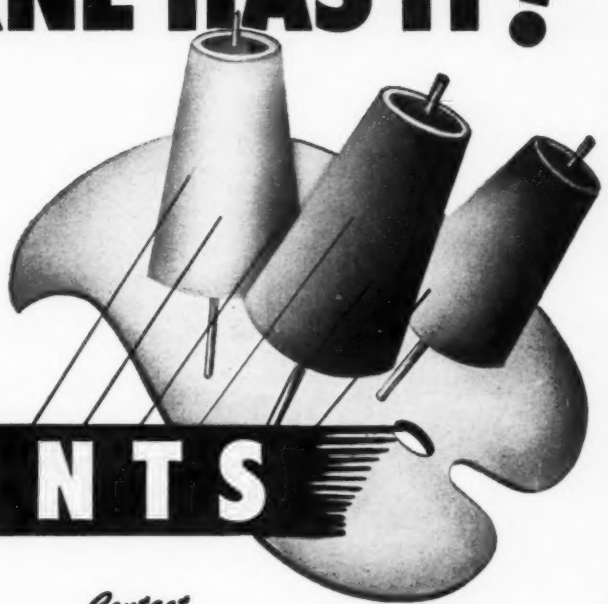
UNMATCHED
ON NYLON & WOOL!

The Amazing New

SOLUTINTS



SOLUTINTS are a series of fugitive tints that provide identification, lubrication, and improved processing of all natural and synthetic fibres. In addition to giving *maximum tinctorial strength* — SOLUTINTS combine controlled moisture retention with *improved scourability*,

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BORNE CHEMICAL COMPANY, INC.
82 Years of Textile Know-How
Formerly BORNE, SCRYMSER COMPANY
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Give your WASH 'n WEAR FABRICS EXPERT QUALITY with a PROCTOR FINISH

Proctor Chemical Company specializes in the development and manufacture of wash and wear fabric finishes. When you use Proctor Finishes for wash and wear fabrics, you have the assurance of top quality. Let a Proctor representative explain the application and properties of these wash and wear fabric finishes:

1. **PROTOREZ EU-50:** Cyclic ethylene urea resin
2. **PROTOREZ EU-50 LF:** Low formaldehyde cyclic ethylene urea resin
3. **SAFE-T-SET RESIN:** A triazone resin
4. **SAFE-T-SET SPECIAL:** A new idea in a non-chlorine retentive resin
5. **CURITE CATALYSTS:** Complete line for the cure acceleration of thermosetting resins
6. **MELOTONE X-2:** Durable softener designed for plasticizing thermosetting resins producing unique softening properties
7. **EVERSOFT 1550:** Permanent thermosetting softener
8. **PROTOLUBES:** Polyethylene emulsions to improve abrasion resistance and tear strength
9. **SEWING LUBRICANT 952:** For reducing needle cutting; thus improving seam efficiency
10. **PROTAMINES:** Cationic softeners

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Gentlemen: Please send me samples and technical bulletins on the following items checked:
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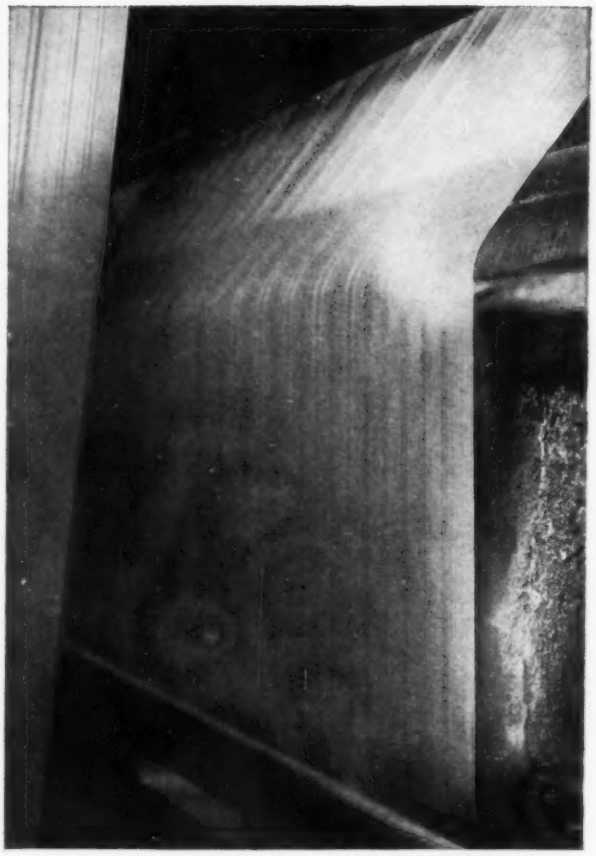
PROCTOR CHEMICAL CO. INCORPORATED
SALISBURY, NORTH CAROLINA



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Come to Kemp

Kemp Radiant-Flame Compression Singeing equipment can speed up your operation from 75% to 100%. . . drastically reduce costs for labor, maintenance, and fuel . . . and still turn out a *better product!*

Kemp singeing is a high-speed operation, ideal for modern fabrics. Material travels over burners in a split second; is brushed by a solid mass of flame for a closer, more even singe. The unique Kemp *pre-mix* concept . . . the mixing of oxygen and fuel gas *before* ignition . . . eliminates excess oxygen in the combustion chamber formed by the burner head and rapidly traveling material. Thus, the nap is not burned, but *carbonized* and carried away by escaping combustion gases. The resulting singe is cleaner, faster, and cheaper.

Your Kemp Representative will gladly give you full information and recommendations to speed up your operation. Call him, or write us for Bulletin 6-A. The C. M. Kemp Mfg. Co., 405 E. Oliver St., Baltimore 2, Md.

KEMP OF BALTIMORE

savings in labor, replacement parts, and down time.

Dayton Rubber Co., Textile Div. Dayton, Ohio.

Do you want more data? Write ◂ or use card on page 199; list L-107

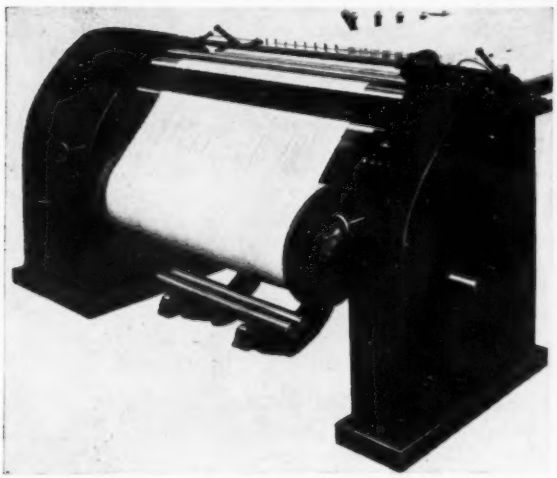
Machine ties in heavy carpet yarns, too

In addition to tying any combination of warps (leased-to leased, flat-to-flat, flat-to-leased, or leased-to-flat) the model GK-6BX Titan warp tying-in machine is equipped to handle the heavy yarns found in such items as papermaker felts, carpets, etc., and including glass fiber yarns, cotton, synthetics, worsted, woolen, etc. The machine is built with double selection control and multi-advance speed motion.

Edda International Corp., 468 Fourth Ave., New York 16, N. Y.

Do you want more data? Write ◂ or use card on page 199; list L-108

Complete slasher for cotton and synthetics



Front end of the new Hibbert slasher.

A slasher made by Joseph Hibbert & Co., Ltd., Darwen, England, is available through a supplier in the United States. The machine is equipped with (1) a headstock that provides a constant, predetermined tension throughout the build-up of the beam; (2) multican dryer section; (3) a choice of two size applicators; and (4) adequate controls.

The headstock can be adjusted readily to any predetermined tension, dependent on the number of ends and the count, and can operate over a ratio of bare barrel diameter to full diameter of up to 1:5.5. It can be supplied to work with bare barrel diameters from 4" to 5", 5" to 6", etc.

The only electrical equipment is a simple a-c squirrel-cage type motor and associated control gear. A hydraulic, variable speed gear is employed to control the speed of the machine, and it provides any winding speed within the wide range of 0 to 100 yards per minute.

The number of drying cans can be selected to meet requirements. A positive chain drive and an automatic constant yarn tension control device enable yarn stretch and velocity to be predetermined to any given extent during actual drying operation. Cans are stainless steel, all welded, and are made for steam pressures up to 40 psi. Each can group is equipped with independent stop valve

A HIGH SPEED TWISTER SPINDLE

by Zinser

FOR SPEEDS UP TO 15000 RPM AND PACKAGE WEIGHTS TO 15 POUNDS

EQUIPPED WITH GENUINE SKF - HF & HZ ROLLER BEARING INSERTS.

SWEDISH STEEL CHROME PLATED BLADE

CHROME PLATED STEEL WHORL

INTERNAL EXPANSION KNEE BRAKE OR FINGER BRAKE

STEEL BASE WITH RUST RESISTANT FINISH

For all Twisting Applications, including: Draw-Twisters, Ply and Cable Twisters, and Up-Twisters. Many thousands are running perfectly in mills in the United States.

TOP DRIVE FILLING SPINDLES — WARP SPINDLES — PAPER PACKAGE WOOLEN SPINDLES —

ALSO MADE BY . . . Zinser

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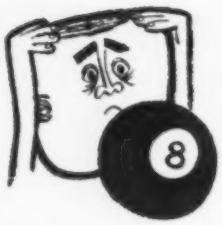
TEXTILE SUPPLIES W D USED MACHINERY

Watson & Desmond

P. O. BOX 1954 · CHARLOTTE, NORTH CAROLINA



HELP WANTED?

Is your problem one of . . .

- Rust spots?
- Uneven bleaches from batch to batch?
- Tender or weak places in the fabric?
- Uneven dyeing of Directs, Vats or Naphthols?
- Harsh hand of fabric after dyeing or bleaching?
- Yellowing or oxidizing in drying or storage?
- Pink, green, or blue and yellow spots in bleached goods?

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to enable steam demands to be adjusted readily to warp and speed requirements. Guide roller and first cans are coated to prevent yarn sticking. Individual temperature controls are available.

Either single- or double-roll size boxes are offered. These are hydraulically loaded in any combination. Rubber-covered squeeze rolls are optional.

A low-capacity container permits a quick turnover of starch products and consequently dispenses with the need of recirculation. Size level is controlled by a sensitized electrode.

Atkinson, Haserick & Co., Inc., P. O. Box 509, Framingham, Mass.

Do you want more data? Write ◂ or use card on page 199; list L-109

New dyes and chemicals

A bacteriostatic finish for textiles remains effective for even up to 50 washings. Called Eversan R, it can be applied to cotton, wool, rayon, and a number of other synthetic fibers. The finish inhibits the growth of odor-forming and perspiration decomposing microbes and a broad spectrum of other bacteria by fixing a bactericidal metal atom within the cellulosic or keratinic molecule of the textile's own fiber. It is nontoxic, nonirritating, and nonallergy provoking, and it improves the hand and other physical qualities of the fabric.

Ion Exchange & Chemical Corp., 48 Leonard St., New York, N. Y.

Do you want more data? Write supplier or use card on page 199; list L-201

A wide range of green shades from bright to subdued, is produced when a number of fast-color salts or bases are coupled with Naphthol AS-FGGR. The shades offer exceptionally high fastness properties, especially to light, and all are dischargeable.

Verona Dyestuffs, Springfield Rd., Union, N. J.

Do you want more data? Write supplier or use card on page 199; list L-202

Two printing azoics for producing bright green are available. They are designated Pharmasol Brilliant Green GL and Pharmasol Brilliant Green 4GL.

Verona Dyestuffs, Springfield Rd., Union, N. J.

Do you want more data? Write supplier or use card on page 199; list L-203

The detergent S. D. 50 is offered for use in scouring, wetting, dye leveling or assisting, and emulsifying. It gives ready rinsibility, low alkalinity, stable foaming properties, no inorganic salt content, and excellent stability in acid and mild alkaline solutions. As a penetrant it is useful with coning, winding, and after-treating emulsions where the presence of electrolytes might be objectionable.

Laurel Soap Mfg. Co., Inc., Tioga, Thompson & Almond Sts., Philadelphia 34, Pa.

Do you want more data? Write supplier or use card on page 199; list L-204

Three industrial fungicides called Fungitrol 25, Fungitrol 50, and Fungitrol 100 are designed to lengthen the service of fabric and cordage made of natural fibers. For all practical purposes the agents are colorless, Fungitrol 25 being off-white in normal concentrations, and impart little or no odor.

Nuodex Products Co., Div. of Heyden Newport Chemical Co., Elizabeth, N. J.

Do you want more data? Write supplier or use card on page 199; list L-205

A series of water-soluble, cationic surface agents, called Ethoquads, with members useful as wetting agents,

emulsifiers, dispersing and solubilizing agents, and as softening and antistatic agents, combines the properties of quaternary ammonium compounds and ethoxylated fatty amines.

Armour and Co., Chemical Div., 1355 W. 31 St., Chicago 9, Ill.

Do you want more data? Write supplier or use card on page 199; list L-206

Ethylene urea in pure form is now available under the name Cyclo-Ethylene Urea. A colorless, odorless, neutral solid easily soluble in water, methanol, ethanol, etc., it also is available in an aqueous solution (40%) under the trade name Atco 40-SP.

Metro-Atlantic, Inc., Centredale, R. I.

Do you want more data? Write supplier or use card on page 199; list L-207

Pigment padding colors, called Skytone, are offered in a complete selection of brilliant shades. Economical and easy to apply, the colors have exceptional fastness properties and are compatible with all "drip-dry" finishes.

The Hilton-Davis Chemical Co., 2235 Langden Farm Rd., Cincinnati 13, Ohio

Do you want more data? Write supplier or use card on page 199; list L-208

An azoic base (an improved form of Scarlet G Base) is being marketed under the name of Hiltonil Fast Scarlet GC Base. The new form diazotizes more rapidly and easily than did the former, produces a clear solution free from tars and impurities, and provides more complete coupling.

The Hilton-Davis Chemical Co., 2235 Langden Farm Rd., Cincinnati 13, Ohio

Do you want more data? Write supplier or use card on page 199; list L-209

A wash-and-wear finish of exceptional durability is provided by "Wash & Wear Resin EL." It has unusual resiliency and wrinkle recovery, produces stabilization and high shrinkage control, withstands the effects of chlorine bleach from washing, and maintains the high tensile strength of original textiles.

Chemical Products Corp., P. O. Box 61, Little Falls, N. J.

Do you want more data? Write supplier or use card on page 199; list L-210

Fast-to-light pinks, bluish reds, and bordeaux shades may be obtained through the use of Procion Rubine B, which is useful in general as the red component in shades. The dye is applicable to cellulosic fibers by all the established methods for Procions, continuous or batch-wise. It has good chemic fastness on cottons, and is suitable for discharge printing in pale depths of shade on silk and nylon.

Arnold, Hoffman & Co., Inc., 55 Canal St., Providence 1, R. I.

Do you want more data? Write supplier or use card on page 199; list L-211

A shrink-resistance treatment for wool (acid chlorination) that is called Chloregal D reduces the tendency of wool to felt. It may be applied by conventional dyehouse equipment to wool in the form of yarn or knitted or woven fabrics. The treatment does little damage to the wool fiber, giving good strength and hand, and does not cause the treated wool to darken with age.

Geigy Dyestuffs, Div. of Geigy Chemical Corp., Ardsley, N. Y.

Do you want more data? Write supplier or use card on page 199; list L-212

FREE 30-DAY TRIAL!

Try this new, powerful, low cost textile magnet in your own lines—no obligation

Big, 36" spiked apron magnet costs only $224

Available direct from Eriez, or through your original equipment manufacturer

Pardon our enthusiasm—but we're so sure our new spiked apron magnet, designed especially for use where light flows of material are involved, is the *greatest* thing the textile industry's seen for years, we're willing to let you try it for a 30-day test period. *No* high pressure sales talk; *no* cajolery; *no* obligation of any kind. If you're not satisfied at the end of the trial period (but we know you will be) just return the unit—no questions asked. Have you ever had a *better* offer?

For years, Eriez textile magnets have been the overwhelming favorite of the industry; in fact, *nine out of ten mills specify "ERIEZ" when they order.* These non-electric magnetic units remove all traces of tramp iron from fiber and waste lines; protect carding and garneting equipment; prevent fires, product contamination and machinery damage. No other magnetic equipment manufacturer has the experience, the know-how or the skilled field and lab staffs that Eriez has—and there's always an Eriez sales engineer nearby to serve you. Why take a chance? . . . take Eriez and *know* you're getting the most dependable, most economical tramp iron protection.

Note these features: Completely non-electric units; no operating or maintenance costs; first cost is the only cost. Magnetic strength is guaranteed forever. Units are self-contained; quickly and easily installed.

ERIEZ

Cut out this coupon; mail it today!

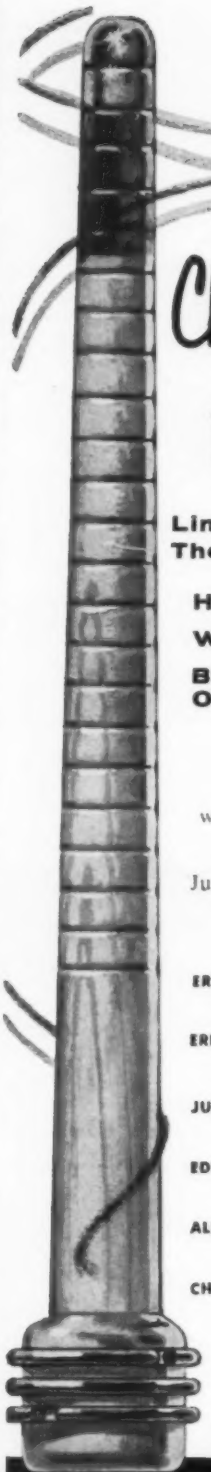
Eriez Mfg. Co.,
72-L Magnet Drive, Erie, Pa.

ERIEZ HI-POWR MAGNETIC SEPARATORS

( ) Please mail more information on the Model D magnet
( ) Please have your representative call
( ) Please send a magnet for 30 day free trial

*The inside dimension of my feeder is*_____

Name_____
Company_____
Address_____
City_____ State_____



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Line Fit . . . Conforming Fit
Then you'll want to know

HOW MUCH CHOKE?
WHAT DROP?
BUSHING IN BARREL OR BUTT?

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MONTICELLO, GEORGIA
The ONLY manufacturer of Card Room Bobbins in the South

New dyes and chemicals *continued*

A resin-bonded pigment red known as Aridye R Red RF is for the fast-color printing of cottons, synthetics, and blends for apparel and household uses. Recommended for neutral red shades and browns and tans, it provides light-fastness that meets normal drapery requirements and excellent fastness both to repeated washings and vigorous drycleaning. It also provides excellent resistance to caustic cut-out in plisse work.

Interchemical Corp., Color & Chemical Div., Hawthorne, N. J.

Do you want more data? Write supplier or use card on page 199; list L-216

A retarding agent that causes Orlon and Acrilan dye to be held in the bath through the early stages and then released at a uniform rate through the remainder of the dyeing cycle, enables dyers to match shades without streaking or blotching. Called Retarder A Ciba, it may be used with basic or cationic dyes when dyeing Orlon 42 and Acrilan 16.

Ciba Co., Inc., 627 Greenwich St., New York 17, N. Y.

Do you want more data? Write supplier or use card on page 199; list L-217

Reads tension on finest yarns

Yarn tensions from 0.5 to 3.0 grams can be read accurately and easily with the Type Ten 3K yarn tension meter. Developed through the joint efforts of an American hosiery machinery manufacturer and the Swiss firm of N. Zivy and Cie, S. A., the meter is designed for hand use in checking and controlling yarn tension under load during knitting, spinning, and winding operations.

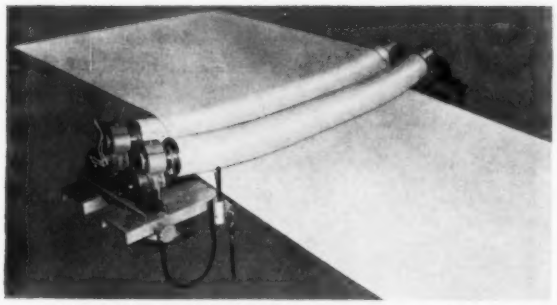
Fidelity Machine Co., Inc., 1908 Frankford Ave., Philadelphia 24, Pa.

Do you want more data? Write or use card on page 199; list L-110

Automatic 3-way web control

A triple-action automatic web control unit, named the "Web Master," simultaneously prevents misalignment of fabric edges, eliminates wrinkles, and prevents loss-of-width. Control is partially effected by the over-all spreading action of two rubber-covered rolls with axles having short, rigid portions and with flexible end portions.

The curvature of the end-sections of the rolls varies automatically in response to a sensitive finger edge alignment on each selvage. The resultant combined control



Mount Hope's "Web Master" automatic control unit.

action keeps the web smooth, at full width, with both edges aligned. It provides fast, positive control for all types and weights of open-weave textile fabrics and throughout the processing of tire cord fabric. Models are available to meet all production requirements and web tensions up to 10,000 pounds across the roll.

Mount Hope Machiney Co., 15 Fifth St., Taunton, Mass.

Do you want more data? Write ◂ or use card on page 199; list L-111

Attachments for "Reading" half-hose machine

Several attachments or devices have been developed for increasing the efficiency and operational range of the "Reading" CK-A inlaid pattern circular knitting machine for making men's and boys' fancy patterned hosiery:

(1) An overplaid attachment for producing true argyle, overplaid, or overchecked patterns (the machine works semi-automatically when this attachment is in use);

(2) A binder assembly (used only when knitting patterns without overplaid) for automatically cutting and holding the yarn ends when a yarn change is made at either of the four knitting feeds;

(3) An air device which keeps yarn ends away from the knitting area and prevents their being caught by the needles; and

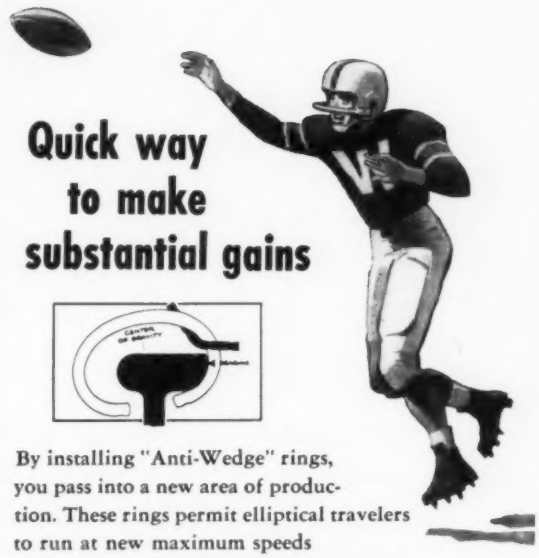
(4) A 150- slot trick drum to replace the 100-slot drum if desired.

Textile Machine Works, Knitting Machine Div., Reading, Pa.

Do you want more data? Write ◂ or use card on page 199; list L-112

Homogenizes size, dye dispersions, etc.

Starch solutions, dye dispersions, oil emulsions, sizings, and water-proofing emulsions may be prepared quickly with the Polytron homogenizer and disperser. Made in four models to meet any application from the small laboratory to large industries, the units will (depending on the characteristics of the material to be treated) cut and break up particles from sizeable chunks to very



Quick way to make substantial gains

By installing "Anti-Wedge" rings, you pass into a new area of production. These rings permit elliptical travelers to run at new maximum speeds without excessive fly or wedging of yarn. A DIAMOND FINISH exclusive.

WHITINSVILLE (MASS.) SPINNING RING CO.

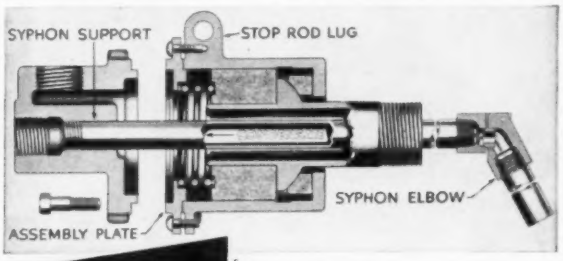
Makers of Spinning and Twister Rings since 1873

DIAMOND FINISH

Rep. for the Carolinas & Va.: W. K. SHIRLEY, P.O. Box 406, Belmont, N. C.

TRY THIS on your Dry Cans and 30" Slasher Cylinders

We'll gladly furnish a pair of these units for 90-day obligation-free trial in your mill. The Type SB2P is self-supporting, completely packless, needs no lubrication or adjustment. The Johnson Syphon Elbow permits the use of two straight pipes instead of an unwieldy curved syphon pipe, is hinged to pass right through the joint.



Johnson ROTARY PRESSURE Joints

First in the Textile Industry

Write for Catalog S-3002

Shows self-supporting Johnson Joints for all needs . . . on print cans, calenders, compressive shrinkage ranges, big 5' and 7' cotton slashers, dry cans, etc.

THE JOHNSON CORPORATION

815 Wood St., Three Rivers, Mich.

small particles ranging in diameter from a few microns to sub-micron size.

The heart of the unit is its milling head, a precision ring-within-a-ring combination of shearing blades. The inner ring of shearing blades, revolving at speeds up to 18,500 rpm on a central shaft, is encased within a stationary ring of shearing blades that is attached to a stationary outer tubular shaft. The particles met by the rotating member are shattered against the outer ring of shearing blades and against other particles. Additionally, shear, cavitation, and pressure changes take place and further reduce particle size. The rotating inner ring provides a strong pumping action that keeps the mass circulating.

Bronwill Scientific Div., Will Corp., P. O. Box 127, Brighton Station, Rochester 10, N. Y.

Do you want more data? Write or use card on page 199; list L-113

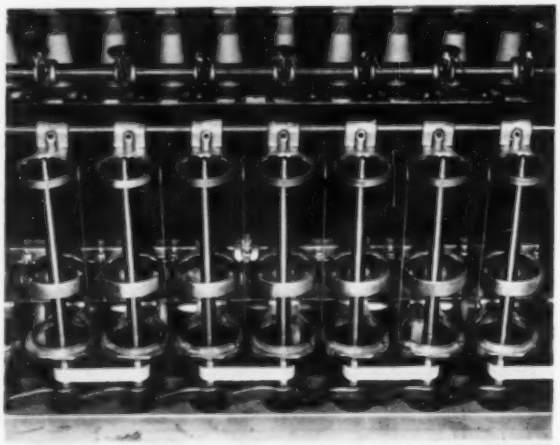
Colorful, "smiling," employee posters

Two-color posters that talk the employee's language, recognize him as a personality as well as a cog in the production machine, and sell employee responsibility with a smile are available in 17" x 22" size. The posters are supplied only after they have been approved by some of the leading personnel executives in the United States. Supplied every 10 days, they cover every phase of employee relations—they're simple, direct, brief, friendly, good-humored, and practical.

The Publication Counseling Service, 310 W. Congress St., Detroit 26, Mich.

Do you want more data? Write or use card on page 199; list L-114

Improvements to Gwaltney ease spinner's tasks



The increases in speed and package size of the Gwaltney spinning frame have been attained with an improvement in yarn quality. The working areas of the frame have been cleared of all sub-assemblies that could obstruct and slow down the motions of the operator. The benefits introduced by design changes include: a four-inch reduction in height (making it easier to creel) effected by lowering the roll beam; tilting separators, particularly valuable to narrow-gauge frames, speed up traveler changing; redesigned balloon control rings provide im-

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EFFICIENCY AT HIGH TEMPERATURES
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for maximum economy in shipping and storage where a liquid desizer is preferred
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and the extra-convenient powdered product RAPIDASE-Z, in drums or in precision-packed 2-oz. and 8-oz. moisture-proof envelopes.

proved control of yarn tensions; individual ring holders in lieu of conventional ring rails improve cleanliness in the ring area; and 01C Speed-Tex rings, specifically designed to support the high speeds, gain full utilization of the frame's large ring diameters and long traverses.

Saco-Lowell Shops, 60 Batterymarch St., Boston 10, Mass.

Do you want more data? Write ◂ or use card on page 199; list L-115

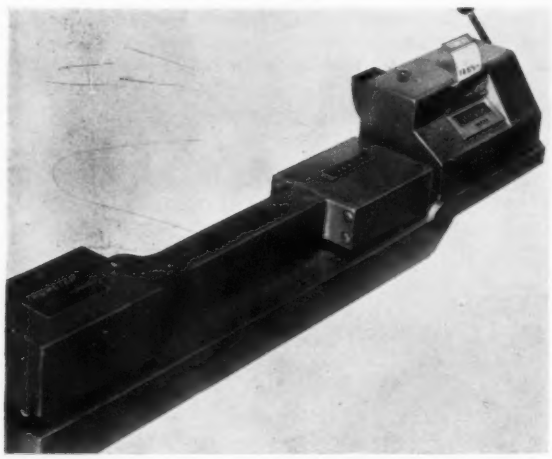
Rings give higher speeds, fewer ends down

A conical spinning and twisting ring provides seam lubrication to the top surface and inside conical surface where the traveler contacts it, giving uniform oil flow and using smaller amounts of oil. Some of the advantages offered in the type "M" rings: cleaner yarn from absence of oil leakage; faster operation with less yarn breakage; long life; and a choice of hand or pressure oil systems.

Herr Mfg. Co., Inc., 320 Franklin St., Buffalo 2, N. Y.

Do you want more data? Write ◂ or use card on page 199; list L-117

Counter also prints totals



The Trumeter counter has a built-in totalizer and a ticket printer that registers the individual pieces of material. This printer holds a roll of tickets and it feeds and ejects one when the yardage is printed on. The print can be spaced for the individual tickets or placed side by side. In addition to the automatic ejection the ticket can be pulled out at any time, the serrated edges simplifying detaching. The carbon ribbon is endless.

Available for the printer is a dial engraved from A to K. This dial can be set to any letter from A to K and that letter will appear on the left of the yardage on each ticket. This will be useful either to determine which operator worked on the machine or to determine the exact yardage point where a defect was noted.

Trumeter Co., 38 West 32 St., New York 1, N. Y.

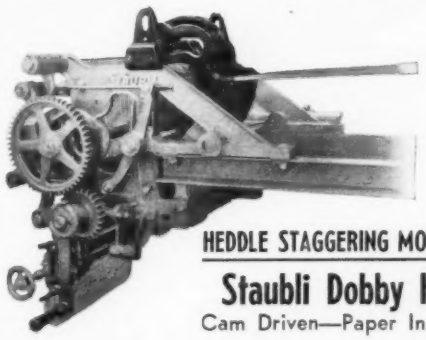
Do you want more data? Write ◂ or use card on page 199; list L-116

WHITINSVILLE, MASS.

H.J. THEILER CORPORATION

SPARTANBURG, S. C.

Benninger Eng. Co., Ltd.	Sectional Warper and Beamer
Staubli Bros., & Co., Ltd.	Dobby Heads
Loepfe Bros., Ltd.	Optical Electronic Feeler
Whitin-Schweiter	Auto.-Filling Bobbin Winders



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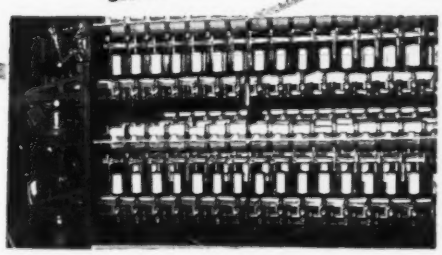
Staubli Dobby Head

Cam Driven—Paper Indicating

TON-TEX SPINNER BELTS

Standard on Twisters and Doublers since 1926



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Roll Stock — For splicing endless on your machines. Complete Ton-Tex vulcanizing system available, including portable vulcanizing plate, tools and cements.

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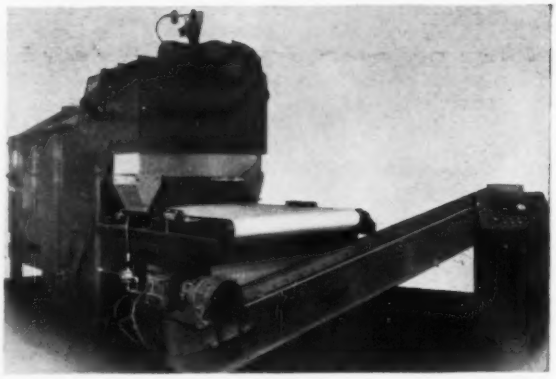


Feeds textile fiber at controlled rates

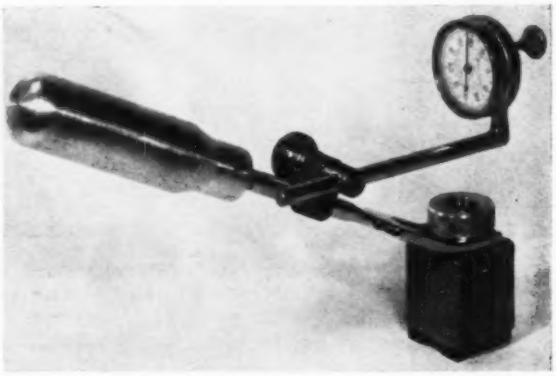
A standard controlling weigh belt, to be used in conjunction with a Proctor feeder, for feeding relatively light-weight products such as cotton linters, glass and other textile fibers, will control the rate of feed with a guaranteed accuracy of plus or minus 1% of maximum scale reading.

It incorporates a constant-speed, chemically inert, light-weight conveyor arranged to continuously and automatically weigh the amount of material passing over it. Any variation in weight is immediately transmitted to the feeder control and the feeder speed is adjusted to maintain the preset rate of product feed. It may be used without an auxiliary feeding device and the rate of delivery indicated by a digit integrator or a chart-type recorder.

Proctor & Schwartz, Inc., Seventh St. and Tabor Rd., Philadelphia 20, Pa.

Do you want more data? Write or use card on page 199; list L-118

Drafting roll runout indicator



A device for checking the runout or eccentricity of both top and bottom spinning and slubber rolls consists of a magnetic base to hold the unit in position and a dial indicator actuated by a button held near the center of the roll. Developed by West Point Mfg. Co., the W. P. Roll Runout indicator reads the roll fluctuations away from true center and indicates them as runout, which is twice the value of the roll eccentricity.

Custom Scientific Instruments, Inc., Kearny, N. J.

Do you want more data? Write or use card on page 199; list L-119

New yarns and fibers

The polyester fiber Kodel may be used alone or in blends in the production of apparel fabrics. Spinnable on either cotton, woolen, or worsted systems, the naturally white fiber assumes dyestuffs readily, has excellent resistance to pilling and heat (it can be ironed at 425 F), gives dimensional stability even without heat setting or special processing, and can be finished on conventional dyeing equipment.

Eastman Chemical Products, Inc., Sub. of Eastman Kodak Co., Kingsport, Tenn.

Do you want more data? Write supplier or use card on page 199; list L-213

A nylon weaving yarn permits improved uniformity of finished fabrics. Called NP-5, the yarn possesses the following particular advantages: (1) elimination of pirn taper barré; (2) improved dyeing uniformity; (3) reduction in filling bands; (4) fewer spacing streaks; (5) wider finished fabrics; (6) more uniform fabric width; and (7) improved yarn delivery from package.

E. I. du Pont de Nemours & Co., Inc., Textile Fibers Dept., Wilmington, Del.

Do you want more data? Write supplier or use card on page 199; list L-214

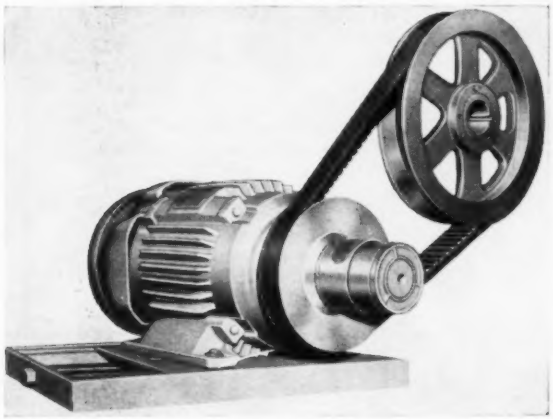
A metallic yarn designed for soft hand and high yield is a Mylar quality foil lamination called Superfine. It accepts both vat and yarn dyeing and resists carbonizing, mercerizing, and vulcanizing. It fabricates well in fine Jacquards and sheers and is also used in knit goods—runs easily on all types of circular and flat machines, and is particularly suited for lingeries, sheers, and undergarments. It requires no supporting yarn in weaving.

Metlon Corp., 432 Fourth Ave., New York 16, N. Y.

Do you want more data? Write supplier or use card on page 199; list L-215

Lets you change speed while spinning frame runs

A new member of the Vari-Spin textile drive family called the 975-T Textile Pulley with 975-4 motor base and belt, is available in horsepower ratings of 7½, 10, or 15. Containing two-to-one speed range, it is made in right- or left-hand assemblies for under-frame or aisle mounting. Lint-proof motors are also available to match



the drive rating. The two-inch belt is of ribbed construction and has high resistance to heat, oil, and moisture.

Reeves Pulley Co., Div. of Reliance Electric & Engineering Co., Columbus, Ind.

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Get WASH & WEAR

RELIABILITY
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..with APEX
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A complete "family" of wash-wear chemicals are now available from one dependable source for controlled and versatile finishing, including:

CELLUSET #1 — For superior wrinkle-shedding and drip-dry resin finish.

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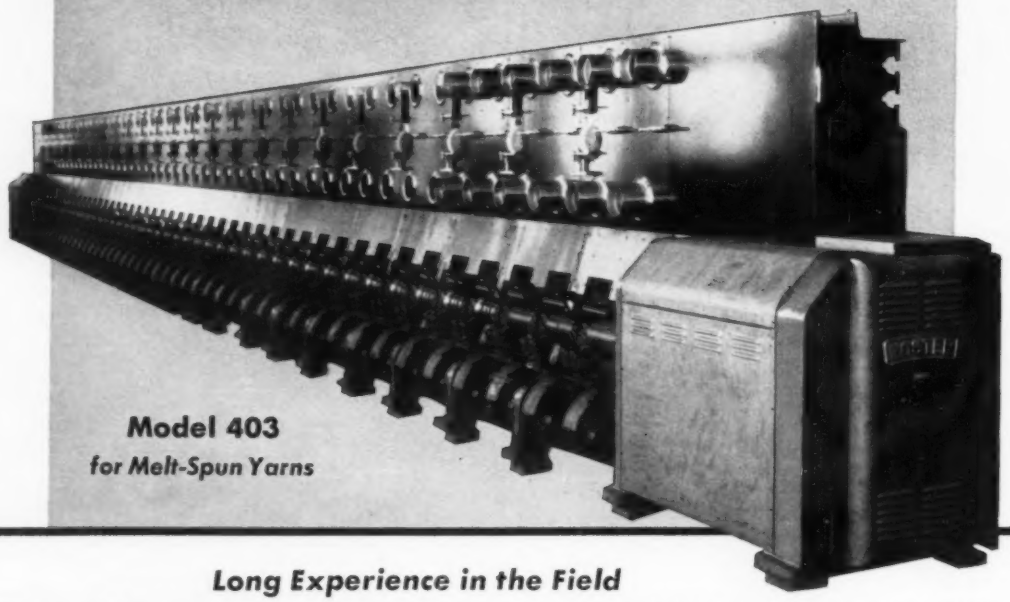
FOSTER TAKEUP WINDERS

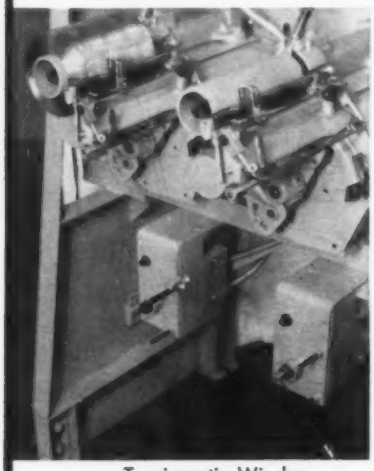
For Melt-Spun, Wet-Spun and Dry-Spun Synthetic Fibre Yarns



Model 403
for Melt-Spun Yarns

Long Experience in the Field

We have had long experience in the design and manufacture of takeup winders for melt-spun, wet-spun and dry-spun synthetic fibre yarns. We have made and are now making machines of this type for leading producers of synthetic fibres. We illustrate herewith the two types of machines and describe briefly how they operate.



Tensiomatic Winder
for Wet-Spun and Dry-Spun Yarns

MODEL 403

For continuous winding of synthetic melt-spun yarns direct from spinneret at speeds up to 6000 ft. per minute. Yarn (15 to 1200 drawn denier) travels from spinneret down through heated chimney over finish rolls, with ceramic guides under each to maintain proper arc of contact, to a series of Godet feed rolls, delivering the yarn to a reciprocating traverse guide (actuated by independently driven traverse cam) and to the package core, which is driven by a chrome plated steel roll. Pressure of package on roll automatically adjusted as its weight increases. One 5¼" traverse package, two 3¼" traverse packages, or four 1" traverse packages per holder. Drive roll shaft and feed rolls driven by separate synchronous motors. Ribbon wind is eliminated. 16" gauge, 56 spindles with 2 independent drives (28 spindles each).

TENSIOMATIC WINDER

For continuous winding of wet-spun or dry-spun synthetic yarns direct from spinneret to 6" traverse packages (1 or 2 packages per position) or to 10" traverse packages weighing up to 30 lbs. Speeds up to 450 feet per minute. Precise wind machine. As package builds up and yarn speed increases, speed of motor is automatically and proportionately decreased by means of dancer rolls and an electronic control device.

Our Engineers Will Work With You

If you are developing a new synthetic fibre, it will pay you to consult our engineers regarding your winding requirements. They are familiar with your problems and can custom design a machine to your requirements.

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HELPFUL BOOKLETS FREE!

10-1 FACTS ON NON-WOVENS. Fact file on non-wovens tells of new machinery, new methods of handling fibers, new bonding agents, etc. Curlator Corporation, Textile Div., E. Rochester, N. Y.

10-2 CATIONIC DYE LEVELER. Bulletin TX-34 gives new information on dye leveler for acid colors on nylon tricot and wool through use of Nopco 1425-B. Nopco Chemical Co., Textile Chemicals Div., Harrison, N. J.

10-3 VARIABLE SPEED DRIVES. New Booklet describes Reliance V-S Drives, with explanation as to how they provide precise, adjustable machine speeds from in-plant A-C Circuits. Reliance Electric & Engineering Co., 24701 Euclid Ave., Cleveland 17, Ohio.

10-4 POLYETHYLENE FINISHING AGENT. Booklet contains information needed to adopt Emulsifiable A-C polyethylene as a finishing agent to any particular process. Solvay Petrochemical Div., Allied Chemical Corp., 5th Floor T, 40 Rector Street, New York 6, N. Y.

10-5 HIGH ACTIVITY CATALYST. Technical Bulletin describes new catalyst AC-6 which provides increased activity, excellent bath life, minimum odor formation, etc. Monsanto Chemical Co., Plastics Div., Springfield, Mass.

10-6 RECONDITION OPENING & CLEANING Bulletin gives whys and wherefores of reconditioning your opening and cleaning lines. Special attention given to each machine with suggestions as to parts replacement. Saco-Lowell Shops, 60 Batterymarch St., Boston 10, Mass.

10-7 AUTOMATIC DELIVERY MACHINES. Brochure describes how Bramwell Automatic Delivery machines can reduce manual handling and operating costs while increasing productivity. Geo. S. Harwood & Son, 50 LaGrange St., Worcester 8, Mass.

10-8 WASH 'N WEAR FINISHES—Samples and bulletins on urea resins, triazone resins, "Safe-T-Set", curite catalysts, softeners, emulsions, seiving lubricant 952, protamines. Indicate product. Proctor Chemical Co., Inc., Salisbury, N. C.

10-9 TOOL FOR SETTING TRAVELLERS. Bulletin on special tool for setting-on C-shaped ring travellers. Tells how traveller losses may be reduced up to 30%. Gubelin International Corp., P. O. Box 305, Mount Kisco, N. Y.

10-11 CONTROLS FOR HEATING, AIR-CONDITIONING. Catalog describes and illustrates line of automatic controls for heating, ventilating and air conditioning control systems. Barber Colman Co., Rockford, Ill.

10-12 INDUSTRIAL SOUND DETECTOR. A portable sound detector that locates small, internal defects in moving machinery without shutting down is the subject of brochure. Jenkins Metal Shops, Inc., P. O. Box 1160, Gastonia, N. C.

10-13 LOOM REBUILDING. Bulletin describes overhauling, narrowing, widening, modernizing to assure new loom performance. Yeoman's Textile Machinery Co., P. O. Box 1661, Spartanburg, South Carolina.

10-14 RING SPINNING FRAME. Folder presents description, illustrations and specifications of up-to-date Simplex ring spinning frames. Davis & Furber Machine Co., North Andover, Mass.

10-15 GRAY IRON CASTINGS. Information on complete line of gray iron castings and famous GOLDEN-FAFNIR bearings. Golden's Foundry, 600 12th Street, Columbus, Ga.

10-16 REDUCE WEAVING SECONDS. Information on how "Lintgo," a special compound used in blowing-off, can sharply reduce your weaving seconds. Lester Laboratories, P. O. Box 4897, Atlanta, Georgia.

10-17 SIZE THAT SATISFIES. Information on getting the correct size package for your mill. Also on Bingham line of slasher rolls. Stoghill & Co., 716 Ponce de Leon Place, Atlanta, Georgia.

10-18 NEW "MARATHON" RING. Information on ring of radical new design incorporating circulating oil bath with reservoir and assuring no throwing of oil. Ragan Ring Co., P. O. Box 174, Seation A, Atlanta 1, Georgia.

10-19 VARI-SPIN Drive for spinning—Bulletin G-586-1 describes new Reeves Pulley Drive adjustable while running. Designed specifically for spinning. Reeves Pulley Co., Columbus, Ind.

HELPFUL BOOKLETS FREE!

OPENING THROUGH ROVING

R-1 Lummus Pepper-Shaker Opener —Gives complete details and photographs Aldrich Machine Works, P. O. Box 750, Atlanta, Ga.

R-2 Static Elimination — How to eliminate static safely and inexpensively. Simco Co., 920 Walnut St., Lansdale, Pa.

R-3 Card Grinding Information — Care and operation of cards. B. S. Roy & Son Co., Worcester, Mass.

R-4 Card Clothing — Describes Strip-O-Matic Card Clothing. Benjamin Booth Co., Allegheny Ave. & Janney St., Philadelphia, Pa.

R-5 Versa-Matic Drawing Frame — Describes drafting elements, quality of sliver, roving and yarn possible. Saco-Lowell Shops, 60 Batterymarch St., Boston, Mass.

R-6 Sargent Opener—Describes opener with rotary evener and stripper. C. G. Sargent's Sons Corp., Graniteville, Mass.

R-7 Ball Bearing Comb Boxes — Describes working principle, shows cut-away Views, Southern States Equipment Corp., Hampton, Georgia.

R-8 Feathertouch Drafting — Describes "highest production per frame at lowest cost." Ideal Industries, Inc., Bessemer City, N. C.

R-9 Automatic Weighing Feeders — Tandem Weighing Feeder produces webs, mats and felts of continuing accuracy. W. D. Dodenhoff Co., Inc., Box 178, Greenville, S. C.

R-11 Flexidyne Individual Card Drive—Describes operating principles, includes prices. Dodge Mfg. Co., Mishawaka, Indiana.

R-12 Bobbins — Catalog describes metal, wood and plastic bobbins. Illustrations show actual use. Lestershire Spool Div., National Vulcanized Fiber Co., Johnson City, N. Y.

R-14 Pneumastop For Fly Frames—Brochure shows type of installation and method of operation. Pneumafil Corp., Charlotte 8, N. C.

R-15 Advantages of Aldrich Pickers —Good technical text, comprehensive pict[illegible] Aldrich Machine Works, P. O. Box 750, Atlanta, Ga.

R-16 Universal Card Coiler—Gives 12 reasons why it's "the best," includes dimensions. McDonough Power Equipment, Inc., McDonough, Ga.

R-17 New Condenser Tape — Describes Supr-O-Tape an impregnated fabric condenser tape. Benjamin Booth Co., Allegheny Ave. & Janney St., Philadelphia 34, Pa.

R-18 Coilers and Conversions — Describes new complete coilers and conversions for cards. Southern States Equipment Corp., Hampton, Ga.

R-19 84" Woolen Card — Includes picture, floor plan, description, and technical details. Davis & Furber Machine Co., North Andover, Mass.

R-20 SRRL Opener—Cleaner—Information on new SRRL development for opening and cleaning cotton being manufactured for sale to mills by Davidson-Kennedy Co., 1090 Jefferson St., N. W., Atlanta, Ga.

SPINNING—TWISTING—WINDING—SPOOLING—WARPING—THROWING

R-101 Spinning News — Up-to-the minute news on spinning equipment. Roberts Co., Sanford, N. C.

R-103 Products For Spinning and Weaving—Complete line, applications, advantages shown. Dayton Rubber Co., Textile Div., Dayton, Ohio.

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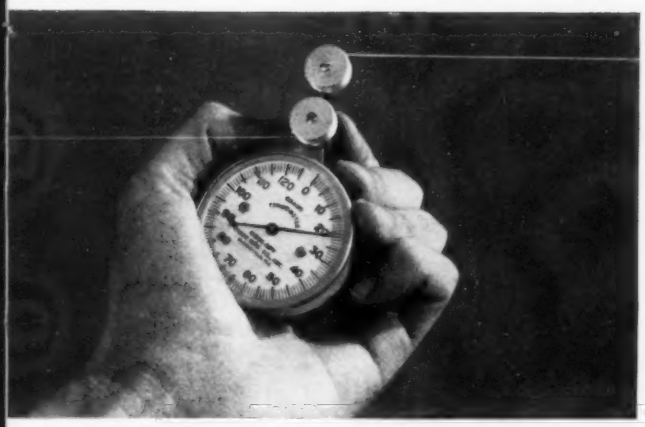

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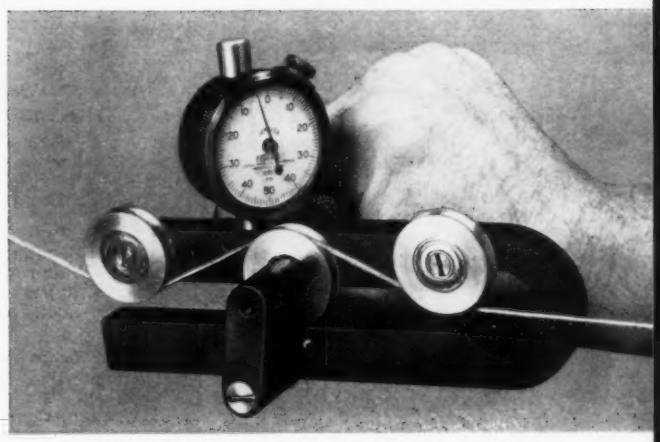

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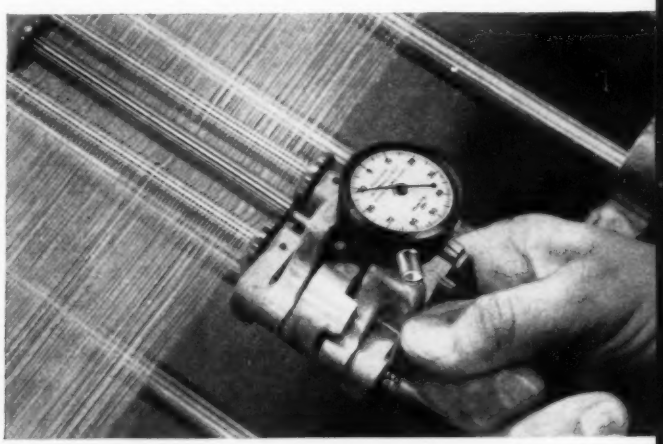

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R-152 Giant Aluminum Cotton Beams —Describes 38 x 54" section beams for cotton. Hayes Industries, Inc., Jackson, Mich.

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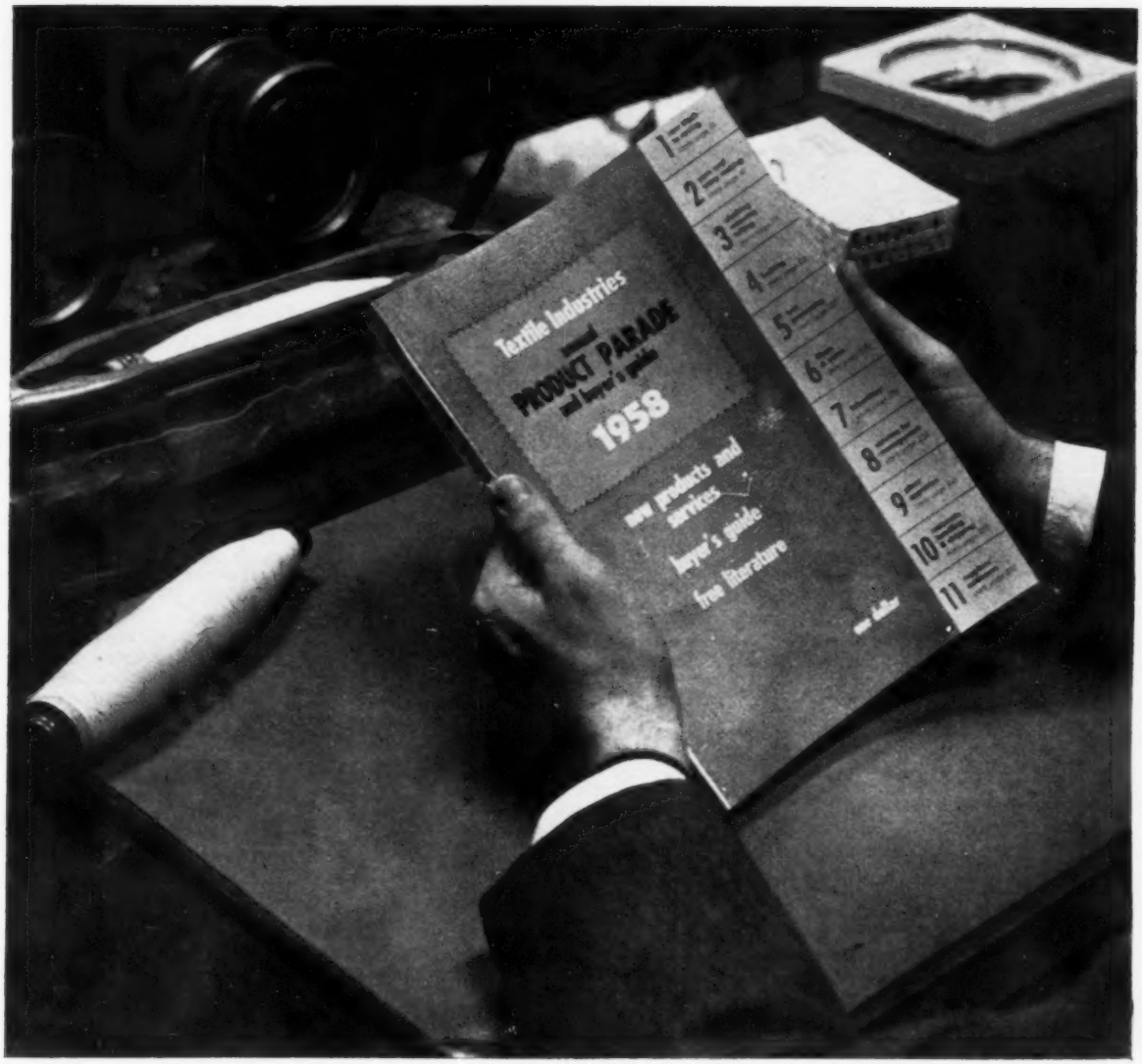

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R-443 Sodium Hydrosulfite — Literature and test samples are available on "T-C Hydro." Tennessee Corp., 617-629 Grant Bldg., Atlanta, Ga.

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R-448 Ball Bearing Turn Table — Describes 48-inch steel turn table for mills. Birch Brothers, Inc., 32 Kent St., Somerville, Mass.

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R-462 Bleaching With Peroxygen Chemicals — Bleaching methods comprehensively treated. Becco Chemical Div., Food Machinery & Chemical Corp., Station B, Buffalo 7, New York.

R-464 Automatic Control System For Continuous Bleaching — How to control temperature, pressure and liquid level. Taylor Instrument Companies, Rochester 1, New York.

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R-467 Regeneration Of Zeolite Water Softeners — Explains advantages of Lixate Process. International Salt Co., Scranton, Pennsylvania.

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R-469 Single Apron Stock Dryers — Presents latest idea in automatic drying. C. G. Sargent's Sons Corp., Graniteville, Mass.

R-470 Eliminate Dye-Bath Shock — How to protect fabrics from crow's-feet, uneven shades. Foxboro Company, 487 Neponset Ave., Foxboro, Mass.

R-474 Industrial Brushes — Features use on shears, printing machines. M. W. Jenkins' Sons, Inc., 444 Pompton Ave., Cedar Grove, N. J.

R-475 Waste Heat Recovery — Describes system of waste heat recovery from polluted water. Ludell Mfg. Company, 5200 West State Street, Milwaukee, Wis.

R-476 Washers For Scouring, Bleaching, Acidifying — Describes high-capacity, continuous process washers. C. G. Sargent's Sons Corp., Graniteville, Mass.

R-478 Wool Cleaning Unit—Describes unit for cleaning carpet wools mechanically before scouring. Proctor & Schwartz, Inc., 7th St. and Tabor Rd., Philadelphia 20, Pa.

R-479 Naphthol for Lightfast Browns—Booklet describes new, straight, nonsubstantive naphthol, Naphthol AS-BN, for the continuous naphtholation of cotton and rayon piece goods in the dyeing of economical, fast-to-light browns. General Dyestuff Co., 435 Hudson St., New York 14, New York.

R-480 Softener, Lubricant, Napping Aid—Technical information available on softener, lubricant and napping aid for natural and synthetic fibers, yarns and fabrics. Nopco Chemical Co., Harrison, N. J.

R-481 Handbook on Methocel—Gives technical information and use data on family of methylcellulose ethers called Methocel. Organic Chemicals Sales, The Dow Chemical Co., Midland, Mich.

FIBERS AND YARNS

R-502 Fortisan-36, New Textile Fiber—Includes charts, diagrams, text, presents technical properties. Textile Sales Dept., Celanese Corp. of America, P. O. Box 1414, Charlotte, N. C.

R-503 Caprolan Nylon Heavy Yarns—Describes strength, long flex life and ready dyeability. Fiber Sales Dept., National Aniline Div., 261 Madison Ave., New York 16, N. Y.

(Continued Next Page)

WARP SIZING

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WARP SIZING

Purpose of Sizing
The Material to be Sized—Cotton
The Material to be Sized—Man-Made Fibers
Materials for Sizing
Analysis and Testing of Materials for Sizing
The Sizing Process
Testing and Analysis of the Sized Materials
Handling and Properties of the Sized Warp
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HELPFUL BOOKLETS FREE!

R-506 Rayon—Mile By Mile—Details on how rayon is produced mile by mile, perfect inch by inch. Industrial Rayon Corp., 500 Fifth Avenue, New York 18, N. Y.

R-507 The Chemstrand Nylon Story—Describes the birth and growth of Chemstrand nylon. Chemstrand Corp., 350 Fifth Ave., New York 1, N. Y.

R-508 Color-Fast Fibers — Further information on "Coloray," Courtauld's solution dyed rayon staple which is a contribution to colorfastness in fabrics. Courtaulds (Alabama) Inc., 600 Fifth Ave., New York 20, N. Y.

RESEARCH—TESTING—LABORATORY

R-601 Testing Instruments—Descriptions of 37 instruments for testing textiles. Custom Scientific Instruments, Inc., 541 Devon St., Kearney, N. J.

R-602 Metal Detector — Spot troublemakers before they harm equipment or fabrics. Radio Corp. of America., Dept. S-271, Building 15-1, Camden, N. J.

R-603 Shadograph Weighing Devices—Pictures and information on various types of scales. Exact Weight Scales Co., Columbus 8, Ohio.

R-604 Evenness Tester—Details on taking the guess out of quality control. Uster Corp., 2516 Wilkinson Blvd., Charlotte, N. C.

R-606 Strobotac — Measures speed of rotating, reciprocating or other cyclic motions. General Radio Co., 275 Massachusetts Ave., Cambridge 39, Mass.

R-607 Yarn Count Scale—Data sheet tells how direct-reading instrument provides fast, accurate method of determining yarn count number. Exact Weight Scale Co., Columbus, Ohio.

MANAGEMENT, PROCESS ENGINEERING CONSULTANTS, FACTORS

R-701 Factoring Service—Details on advantages of factoring, including information on general banking and pension plans. Trust Company of Georgia, Atlanta, Ga.

R-702 Beechcrafts At Work — Tells how Beechcraft executive airplanes can save time and money. Southern Airways Co., Atlanta Airport, Atlanta, Ga.

R-705 The Wonalancet Way — Deals with current problems in Textiles. Wonalancet Company, 128 Burke St., Nashua, N. H.

R-706 A Fair Day's Pay And In Return A Fair Day's Work — Outlines proper utilization of labor, material and equipment. American Associated Consultants, Inc., 250 Park Ave., New York, N. Y.

R-707 Non-Woven Fabrics— Booklet gives outline of nature and history of non-wovens and the manufacturing techniques of today. Booklet 56-219A, Chemical Div., Goodyear Tire & Rubber Co., Akron 16, Ohio.

GENERAL PLANT OPERATION

R-801 Textile Brushes — Describes complete line of brushes for all departments of mill. S. A. Felton & Son Co., Manchester, N. H.

R-802 Belt Lacing Equipment — Includes prices, specifications, etc. Clipper Belt Lacer Co., Grand Rapids, Michigan.

R-804 "Motor Selector." — How to select a-c motors for specific application. Bulletin B-2103. Reliance Electric & Engineering Co., 24701 Euclid Ave., Cleveland 17, Ohio.

R-805 Everything For Floor Care — Describes scrubbing, waxing, polishing and mopping equipment as well as waxes, sealers, and cleansers. Finnell System, Inc., Dept. TI, 1300 East St., Elkhart, Ind.

R-806 Rotary Pressure Joints—Details on self-lubricating, self-adjusting, self-aligning joints. The Johnson Corp., Three Rivers, Mich.

R-807 Servicing "One-Shot" Lubricators—Describes high capacity spring discharge piston pump lubricator. Bijur Lubricating Corp., 151 W. Passaic St., Rochelle Park, N. J.

R-809 Wrap Up Lint Problems—Automatic lint filters remove lint from air, winds it into desposable roll. Bulletin 234, American Air Filter Co., 275 Central Ave., Louisville 8, Ky.

R-810 Stop Corrosion — Details on "Speed-Rex" paint for metal, wood and concrete. Truscon Laboratories, Box 69, Milwaukee Junction, P. O. Dept. T, Detroit 11, Mich.

R-812 Mechanical Power Transmission — Includes drawings, dimension, weights, prices, application. Dodge Mfg. Corp., Mishawaka, Indiana.

R-813 Metal Cleaner and Preserver—Describes Immunol, a neutral, nontoxic, non-flammable, odorless solvent that cleans, degreases and rustproofs metal. Harry Miller Corp., 4th and Bristol Sts., Philadelphia 40, Pa.

R-816 Leather Belting — Selection, installation, proper maintenance. Atlanta Belting Co., 508-510 Whitehall St., S. W., Atlanta, Ga.

R-817 One-Shot Lubricators—Details on pull-type semi-automatic lubricators. Bijur Lubricating Corp., 151 W. Passaic St., Rochelle Park, N. J.

R-818 Story of Nylon Bristle. — Tells of discovery and production, with special attention to "Tynex," a form of Nylon ideal for use in brushes. M. W. Jenkins' Sons, Inc., 444 Pompton Ave., Cedar Grove, N. J.

R-820 Floaxial Dial Scales — Explains mechanism and gives applications. Fairbanks, Morse & Co., 600 S. Michigan Ave., Chicago 5, Ill.

R-821 Modern Methods Of Textile Floor Maintenance — Complete details on taking care of mill floors. G. H. Tennant Co., 2530 N. Second St., Minneapolis 11, Minn.

R-822 Industrial Greases — Describes multi-purpose lithium soap industrial greases. Sinclair Refining Co., 600 Fifth Ave., New York, New York.

R-823 Roller Bearings For Textiles—How roller bearings are employed for more profitable textile production. Hyatt Bearings Div., General Motors Corp., Harrison, N. J.

R-824 Cylinders And Boosters — Complete listing of "in stock" equipment including proce and description. Miller Fluid Power Co., 2040 N. Hawthorne, Melrose Park, Ill.

R-828 Blower And Exhausters — Full description, including detailed drawings. Buffalo Forge Co., 490 Broadway, Buffalo 5, N. Y.

R-829 Paint Stripping Booklet — Explains simplified method of stripping paint. Oakite Products, Inc., 22 Thames St., New York 6, New York.

R-830 Air Filtration — Illustrates Auto-Airmat, a dry-type air filter. American Air Filter Co., Inc., 275 Central Ave., Louisville 8, Ky.

R-832 Drinking Fountains & Coolers—Description of all models, dimensions, illustrations. Halsey W. Taylor Co., Warren, Ohio.

R-833 Textile Leathers Catalog — Characteristics and advantages of "Tannate" leathers. J. E. Rhoads & Sons, 2100 W. Eleventh St., Wilmington, Del.

R-834 Catalog Of Needle Bearings — Design, application for five types of needle bearings. The Torrington Co., Torrington, Conn.

R-836 Metered Lubrication — Points up advantages of central lubrication systems. Bijur Lubricating Corp., Rochelle Park, N. J.

R-837 Service Procedure For Ball Bearings—Helpful manual shows how to increase life of ball bearings. New Departure Div., General Motors Corp., Bristol, Conn.

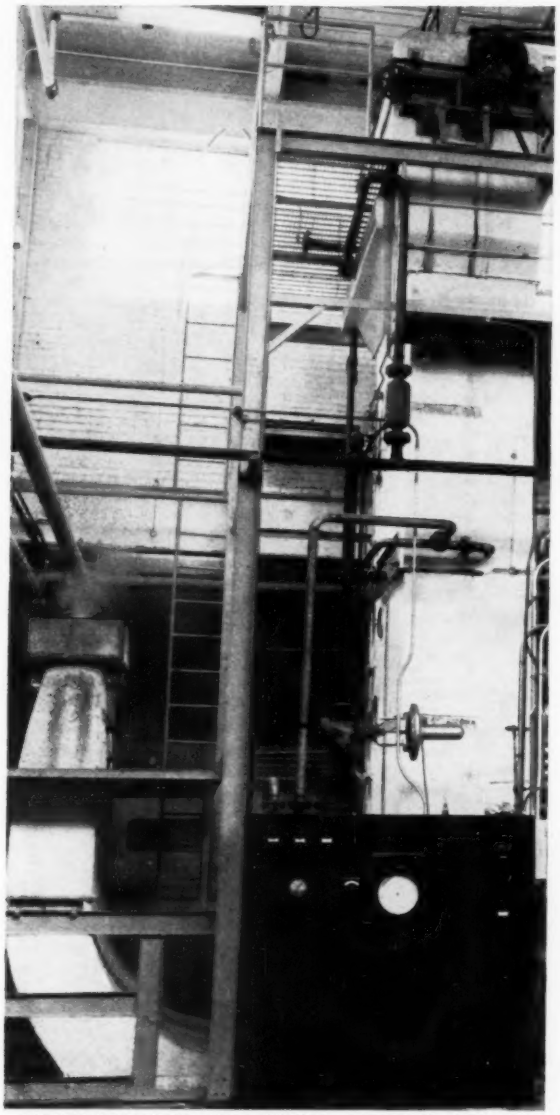
R-839 Lubrication Of Electric Motors—How to lubricate and clean ball and roller bearings. New York & New Jersey Lubricant Co., 292 Madison Ave., New York 17, New York.

R-840 Ball Bearings For Textile Machinery — Bearings for all phases of textile processing. The Fafnir Bearing Co., New Britain, Conn.

R-841 Lubrication Of Bearings — Helpful list of do's and don'ts to prolong bearing life. New York & New Jersey Lubricant Co., 292 Madison Ave., New York 17, New York.

(Continued next page)

Another mill converts to the exclusive Solo-Matic Bleaching Process . . .



OLD J-BOX, already in service at Old Fort, was economically adapted to the improved Du Pont-type J-box through help and advice of a Du Pont Technical Representative.

Old Fort Finishing Co. saves floor space, improves bleaching quality of cotton broadcloth and piece goods

Now . . . over twenty-five mills are cutting costs and speeding production with the exclusive Solo-Matic Bleaching Process, available only from Du Pont!

Latest addition to the list is the Old Fort Finishing Co., Old Fort, N.C.—well-known producer of cotton broadcloth, print cloth and piece goods. Old Fort changed from 4-step caustic-chlorine batch bleaching to the simpler, more effective Du Pont Solo-Matic Process . . . cut floor space and processing time significantly. Bleaching quality improved—and with it uniformity in dyeing and finishing.

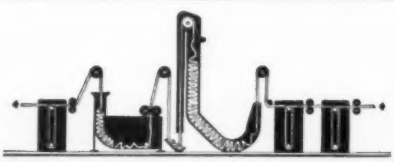
Your bleaching dollar goes further with Solo-Matic

Du Pont's Solo-Matic Process can help you save production and utilities costs as it has for so many mills. It can *double* your production in the same floor space, or maintain the same production in *half* that space with either new or existing equipment. In any case, you can count on improved brightness, fullness and uniformity in your product. Why not get all the facts about Du Pont's exclusive single-stage process? Just get in touch with your Du Pont Representative, or write us. E. I. du Pont de Nemours & Co. (Inc.), Electrochemicals Department, Wilmington 98, Delaware.

DU PONT
REG. U. S. PAT. OFF.

ALBONE® hydrogen peroxide

BETTER THINGS FOR BETTER LIVING . . . *THROUGH CHEMISTRY*



Du Pont's Solo-Matic process—the most advanced single-stage hydrogen peroxide bleaching process available

DON'T CONFUSE THE SOLO-MATIC WITH ANY OTHER PROCESS!

Other processes may *sound* similar, but there is *only one* Solo-Matic Bleaching Process and it was developed by Du Pont. It is essentially a chemical technique that can easily be adapted to any existing or new continuous peroxide bleaching installation. The Du Pont Solo-Matic Process is helping more than twenty-five well-known mills improve bleaching quality, cut costs.

HELPFUL BOOKLETS FREE!

R-842 Textile Mill Cleaning Guide — Methods and means of proper cleaning and maintenance. Oakite Products, 52 Rector St., New York 6, New York.

R-843 For Static Elimination — Eliminates static safely, simply and inexpensively. Simco Co., 980 Walnut St. Lansdale, Pa.

R-845 Cut Costs With Moyno Pumps — Describes "progressing cavity" pumps for mercerizing and sizing. Bulletin 30-TI, Robbins & Myers, Inc., Springfield, Ohio.

R-847 Lubricants For Textiles — Working samples of bearing lubricants, spindle oils, etc. Georgia-Carolina Oil Co., Box 101, Macon, Ga.

R-849 Detect, Extinguish Fires. — Describes portable and built-in extinguishers; smoke detecting and rate-of-rise fire detecting systems. Catalogue "P-40", Dept. "A", Walter Kidde & Co., Inc., Main St., Belleville 9, N. J.

R-850 New Lubricated Plug Valves—Semi-steel and steel lubricated plug line. The William Powell Co., 2525 Spring Grove Ave., Cincinnati 22, Ohio.

R-851 "Tank Talk"—Shows various types of elevated steel tanks. R. D. Cole Manufacturing Co., Newnan, Ga.

R-852 Cotton Mill Equipment — Traces pictorially the steps in processing raw cotton into finished cloth. Westinghouse Electric Corp., 511 Wood St., Pittsburgh 30, Pa.

R-853 Micro Switch Bulletin—Catalog of products includes prices, applications, etc. Micro Switch Div., Minneapolis-Honeywell Regulator Co. Freeport, Ill.

R-854 Roller Bearings For Textiles—How roller bearings can help production. Hyatt Bearings Div., General Motors Corp., Harrison, N. J.

R-855 Unit Heater — Data on the Herman Nelson horizontal and vertical units. American Air Filter Co., Inc., 215 Central Ave., Louisville, Ky.

R-856 Stainless Steel For Textiles—Applications and advantages of stainless textile equipment. Allegheny-Ludlum Steel Corp., Dept. TI-93, Oliver Bldg., Pittsburgh 22, Pa.

R-857 Finnell Combination Scrubber-Vac—Illustrated literature gives complete specifications and describes various methods of combination-machine-scrubbing, including method recommended for cleaning oily floors.—Finnell System, Inc., 1300 East St., Elkhart, Indiana.

R-861 "Vari-Pitch" Sheave Bulletin —Control by means of pitch diameter adjustment described. Allis-Chalmers Mfg. Co., Milwaukee 1, Wis.

R-862 Prevent Corrosion of Plain Steel — Describes special C-17 Pre-Krete, a hydraulic cement formula, designed to prevent corrosion or rust of plain steel vessels. Pocono Fabricators, Inc., Div. of Patterson-Kelley Co., Inc., East Stroudsburg, Pr.

R-863 Penetrating Wood Finish — Describes floor seals for textiles. E. I. Du Pont De Nemours & Co., Inc., Finishes Div., Wilmington, Del.

R-864 Certified Climate Air-Changer System — Describes use with direct humidification for partial or complete air conditioning. Parks-Cramer Co., Fitchburg, Mass.

R-868 Ridge Tool Prices—Capacities and weights included along with pictures. Ridge Tool Co., Elyria, Ohio.

R-869 Stainless Steel Fabrication — Information on ventilating and drying, slasher exhaust, and materials handling in stainless. Sims Metal Works, West Point, Ga.

R-872 Metal Conveyor Belts — Illustrates entire range of manufacture. Ashworth Bros., Inc., Metal Products Div., Fall River, Mass.

R-873 Rihco Humidifiers And Cooling Systems—Describes new atomizers to lessen air consumption in evaporative cooling systems. Aldrich Machine Works, P. O. Box 750, Atlanta, Ga.

R-874 Dynac Brake Motors—Electrical braking of a-c motors-roving, spinning, knitting. Westinghouse Electric Corp., Pittsburgh, Pa.

R-875 Textile Applications For "Scotch" Tape—Some good ideas on using "Scotch." Minnesota Mining & Mfg. Co., St. Paul 6, Minn.

R-877 Industrial Floor Finishes—16-page book contains specifications and descriptions of industrial floor finishes for textile use. Includes directions for application. Minnesota Paints, Inc., 1101 Third Street, South, Minneapolis, Minn.

R-878 HUMIDIFICATION BY GRADUVAC. Bulletin gives details on gravity type atomizer control system and tells how supply of water to atomizers is automatically regulated. Parks-Cramer Co., Fitchburg, Mass.

R-879 SWITCH IDEAS. "How Others Do It" is publication containing ideas submitted by plant engineers and electricians showing how they've used snap-action switches to increase production efficiency. Micro Switch, Div. of Minneapolis-Honeywell Regulator, Freeport, Ill.

MATERIALS HANDLING

R-901 Casters And Wheels—Casters and wheels for all applications. Darnell Corp., Ltd., 12000 Woodruff Ave., Downey, Calif.

R-902 Canvas Baskets — Complete line for textile use. W. T. Lane & Brothers, Poughkeepsie, N. Y.

R-903 Overhead Handling Equipment — Shows successful applications of monorail systems. American Monorail Co., 13106 Athens Ave., Cleveland 7, Ohio.

R-905 Conveyor Key Book—How to step-up production with modern conveying. Logan Co., 1115 Franklin St., Louisville, Ky.

R-906 How To Select A Lift Truck—Excellent means for price comparison between similar trucks. Hyster Co., 2902 N.E. Clackamas St., Portland 8, Oregon.

R-907 Corrugated Containers — Describes Multi-Unit and Bulk Container. Gaylord Container Corp., 111 N. 4th St., St. Louis 2, Mo.

R-909 Tramrail Engineering And Application — Data on how Tramrail Equipment can cut handling costs. Cleveland Tramrail Div., Cleveland Crane and Engineering Co., 1036 East 289th St., Wickliffe, Ohio.

R-910 How To Specify Packaging — Regulations on shipment, how to determine which package to use. Hinde & Dauch, Sandusky, Ohio.

R-911 New Lift Trucks—Shows latest trends in lift truck design. Hyster Co., 2902 N.E. Clackamas St., Portland 8, Oregon.

R-912 Materials Handling For Textiles—Shows how fibre trucks can increase efficiency, protect products. National Vulcanized Fibre Co., Wilmington 99, Del.

R-913 Continuous Power Conveyor—Complete information on Zig-Zag Conveyor. Richards-Wilcox Mfg. Co., Aurora, Ill.

R-914 Stresses On Overhead Tracks —Covers track peening, discusses stresses. Cleveland Tramrail Div., Cleveland Crane & Engineering Co., Wickliffe, Ohio.

R-915 Scientific Materials Handling —Describes various materials handling devices, includes pictures. Bennett Rose Co., Box 8, Roebuck, S. C.

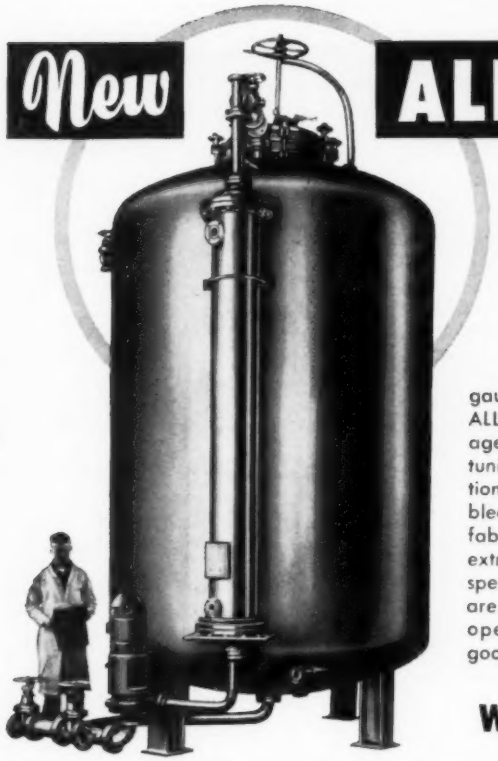
R-916 Overhead Materials Handling —Treats twin fan ceiling cleaners and shock proof electrification as well. Louden Machinery Co., Fairfield, Iowa.

R-917 Little Packaging Library — Series of booklets covers the business of shipping in corrugated boxes. Hinde & Dauch, Sandusky, Ohio.

R-919 Improved Materials Handling —"Materials in Motion" describes use of fibre containers. National Vulcanized Fibre Co., 1056 Beech St., Wilmington, Del.

R-920 Trucks Doff, Store, Become Spooler Tray—Brochure tells how mobile boxes are being used as doff boxes, storage boxes, and spooler trays on Barber-Colman Spooler. Fisher Mfg. Co., Hartwell, Ga.

New ALLEN Unit Package KIERS



Unsurpassed for Easy Installation, Trouble-Free Operation and Low-Cost Maintenance

For boiling or bleaching all types of cotton goods from gauze to heavy twills, these new ALLEN stainless steel "Unit-Package" kiers offer unusual opportunities for more profitable operation to small and medium sized bleacheries and those doing fine fabrics. Large plants, too, find them extremely useful for short runs and special fabrics. In many cases, they are replacing continuous bleaching operations for certain types of goods.

A few of the special features which make these new kiers extremely desirable include:

- **A completely prefabricated unit — pump and heater are integral parts of the kier — for easier installation and maintenance.**
- **Smooth, stainless steel interiors eliminate rub, rust and stain marks.**

Write today for circulars giving complete information on this as well as Allen kiers for knit goods and kiers for cotton and cotton batting.

William Allen Son's Company
SHREWSBURY, MASSACHUSETTS
Division of
O. G. KELLEY & COMPANY, Boston 22, Massachusetts

"What You Want When You Want It"

WONALANCET

Carded and Combed
COTTONS and SLIVERS
for
Woolen and Worsted Mills

WONALANCET COMPANY
128 Burke Street, Nashua, New Hamp.
3240 Peachtree Road, N. E., Atlanta, Georgia

DRONSFIELDS' PATENT

ATLAS BRAND EMERY FILLET

STOCKED BY
THE PRINCIPAL MILL SUPPLY HOUSES AND CARD MAKERS

cut production COSTS 4 ways! ... with MECHO AIR GUIDER

1 SAVE by eliminating expensive spoilage!

2 SAVE by cutting handling costs, reducing damage and loss!

3 SAVE by reducing costly equipment repairs!

4 SAVE with the low initial and operating cost of the Mecho Air Guider!

Hundreds of finishing plants bless the simplicity of operating a Mecho Guider. . .no complicated counterweights or linkages! The sensitive selvage finger points the way to important savings! It handles every imaginable fabric from the lightest to #8 duck; is used in plants handling woven and non-woven fabrics, semi-rigid plastics, artificial leather, rubber, felt and gauze. Constant cloth alignment is maintained at all times.

The precision-engineered accuracy of the Mecho Air Guider, guiding to within an eighth of an inch and ranging from 1 to 400 ypm, is unsurpassed! Stainless steel, acid and moisture resistant units with sealed bearing are also available.

Mecho offers a valuable Guiding Service. Phone, wire or write for your catalog today. Learn how the Mecho Air Guider can save dollars for you.

GUIDER Specialty Company
427 W. Rock Ave.
New Haven 15, Conn.

Personal NOTES ABOUT MEN YOU KNOW

The Combed Yarn Spinners Association has elected **Shannon Gamble,** of Standard-Coosa-Thatcher Co., Chattanooga, Tenn., president. **A. W. Bell,** of American & Efird Mills, Mount Holly, N. C., succeeds Mr. Gamble as first vice-president. Elected second vice-president was **J. L. Barnett** of Perfection Spinning Co., Belmont, N. C. **M. T. Cameron** and **C. C. Dawson** were re-elected treasurer and executive secretary respectively. Directors elected were: **S. T. Stowe, Jr.; T. W. Borland; Howard Houser;** and **John Crawford.**

Staff Photo

Front row seated (l to r): C. K. Torrence, retiring president of the association, and Mr. Gamble, his successor. Standing (l to r): Messrs. Stowe, Houser, Bell, and Borland.

John Cervini has been elected president and general manager of Pacific Textile Processing Co., Hermosa Beach, Calif., to fill the vacancy created by the resignation of **W. L. Thompson.** Mr. Cervini was formerly manager of manufacturing at Cheney Bros., Inc., Manchester, Conn.

G. H. Rauschenberg Co., Inc., Dalton, Ga., has appointed **J. H. (Bill) Eakes** to an executive position. Mr. Eakes was formerly superintendent of manufacturing in James Lees & Sons tufted carpet division.

A. D. Robison has resigned as executive vice-president of Kerr Bleaching and Finishing Works, Inc., Concord, N. C. He is succeeded by **Fred L. Howell, Jr.,** whose duties as general superintendent have been assumed by **R. C. Richardson.** Named vice-president of sales was **Fred J. Manly** of the company's New York City office.

Robert E. Carrigan has joined Barnhardt Manufacturing Co., Charlotte, N. C., as chemist. He was formerly with Union Wadding Co., Pawtucket, R. I.

William C. Appleton has resigned as president and a director of Delaware Mills, Inc., New Castle, Del.

Nelson Barlow has accepted a position as plant manager of the recently reopened plant of Dodgeville Finishing Co., Inc., in Blacksburg, S. C.

W. Ray Shockley has been transferred to the Charlotte, N. C., office of the American Cotton Manufacturers Institute in an administrative capacity. Succeeding him as Georgia and Alabama public relations field representative is **James M. Hale.**

Mr. Shockley
ACMI

Mr. Ingram
NCTMA

Thomas N. Ingram, assistant to the secretary-treasurer of the American Cotton Manufacturers Institute, has been elected assistant secretary-treasurer of the North Carolina Textile Manufacturers Association.

After 54 years in the textile industry, **Smith Crow, Sr.,** has retired as vice-president in charge of manufacturing of Erlanger Mills, Inc., Lexington, N. C., because of ill health due to a serious automobile accident. He has been asked to continue to serve on the board of directors. **J. C. Childers** has been named to succeed Mr. Crow and is in full charge of operations at Lexington. **James McCutchen** has returned to the plant in Lexington to assume the newly-created position of plant manager; he also is chairman of a committee formed to promote closer cooperation among three spinning and weaving plants of the Erlanger chain.

(Continued on page 216)

FAMOUS FALLACIES *about industrial advertising*

Advertising leaves less money for profits

J. H. Jewell refutes this one...

Mr. J. H. Jewell, vice president in charge of marketing, Westinghouse Electric Company, says: "*Well-planned industrial advertising is a cause — never just a result—of sales and profits. In today's economy the quality of communications in selling is as important as the quality of production equipment.*"

Progressive managements realize they must make effective use of all the channels of communicating with markets — salesmen, publication advertising, direct mail, trade shows, catalogs, films — if enough products are to be sold to insure full-scale employment and full use of production facilities.

Advertising has been proven to be the lowest-cost way of making up people's minds. It reaches more people, more often, with *carefully-controlled* messages.

When salesmen call on people who have been preconditioned by advertising, their task is easier, their own efforts more effective.

That is why more and better industrial advertising leads to a greater share of market preference — and greater profits.

NATIONAL INDUSTRIAL ADVERTISERS ASSOCIATION, INC.

271 MADISON AVENUE, NEW YORK 16, NEW YORK

An organization of over 4000 members engaged in the advertising and marketing of industrial products, with local chapters in ALBANY, BALTIMORE, BOSTON, BUFFALO, CHICAGO, CLEVELAND, COLUMBUS, DALLAS-FORT WORTH, DENVER, DETROIT, HAMILTON, ONT., HARTFORD, HOUSTON, INDIANAPOLIS, LOS ANGELES, MILWAUKEE, MINNEAPOLIS-ST. PAUL, MONTREAL, QUE., NEWARK, NEW YORK, PHILADELPHIA, PITTSBURGH, PORTLAND, ROCHESTER, ROCKFORD, ST. LOUIS, SAN FRANCISCO, TORONTO, ONT., TULSA, YOUNGSTOWN.

Personal NOTES ABOUT MEN YOU KNOW

(Continued from page 214)

Representing the Lexington plant on the committee is **Horace W. Buchanan,** plant superintendent.

Erwin Mills, Inc., Durham, N. C., has named **A. Ward Peacock** secretary succeeding **E. W. Dunham.** Mr. Dunham has retired after 39 years with the company.

Harold E. Towslee has been appointed resident manager of E-Z Mills, Inc., Cartersville, Ga. He succeeds **J. W. Gilreath.**

The American Society for Testing Material has presented its Award of Merit to **Oliver P. Beckwith,** quality control director of The William Carter Co. The award was presented in recognition of outstanding service and contributions as secretary of Committee E-11 on quality control of materials, and for constructive work in committee D-13 on textile materials.

Mr. Davis
Chemstrand Corp.

Mr. Kaswell
Fabric Research Lab.

Mr. Painter
Johnson & Johnson

Mr. White
Textile Research Inst.

The Fiber Society elected **S. Jack Davis,** Chemstrand Corp., Decatur, Ala., president at the recent annual business meeting in Montreal, Canada. Elected vice-president was **Ernest R. Kaswell,** Fabric Research Laboratories, Inc., while **E. V. Painter,** Johnson and Johnson, Chicago, Ill., and **Howard J. White, Jr.,** Textile Research Institute, Princeton, N. J., were elected to three-year terms on the governing council.

The following appointments have been made at the Callon plant, Elmrose division, Callaway Mills Co., LaGrange, Ga.: **Paul A. Homier** has been named superintendent; **Ira Grimes** is technical assistant; **Robert J. "Bob" Keithley** continues as plant chemist; and **Norman McClellan** is overseer of non-wovens. * * * **Otis Vowell** has been promoted to overseer of carpet yarn at the Unity spinning plant.

Joseph H. Wright, II, has been elected president of Davenport Hosiery Mills, Inc., Chattanooga, Tenn. He replaces **J. H. Davenport, Jr.,** who will remain on the board in a consulting capacity.

The annual award of the Textile Section of the New York Board of Trade will be presented to **F. E. Grier,** president of Abney Mills, Greenwood, S. C., and chairman of the board of Erwin Mills, Inc., Durham, N. C. The presentation will be made on November 13 at the Waldorf-Astoria in New York City.

F. M. Arthur has accepted a position as head of the cotton department of Textiles-Inc., Gastonia, N. C. Mr. Arthur replaces **Arthur Fuller** who retired.

F. M. Herndon has been promoted to the position of assistant superintendent at the Rockmart, Ga., mill of Goodyear Tire and Rubber Co. He was formerly overseer of carding and spinning at the company's Atco plant.

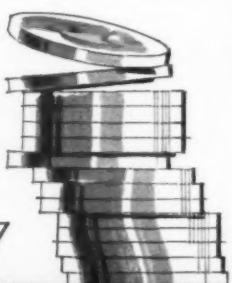
Great Falls Bleachery & Dye Works, Inc., Somersworth, N. H., has announced the appointment of **Lawrence Oliver** as general superintendent. Mr. Oliver was formerly plant manager at Exeter (N. H.) Mfg. Co.

The Hightstown (N. J.) Rug Co. has elected **John P. Chubet** to the post of president. He succeeds **Hugh W. Logan** who retired recently after being with the company for 35 years.

Lawrence L. Heffner has accepted the newly-created position of cotton finishing extension specialist of the Research Center in the School of Textiles at North Carolina State College, Raleigh, N. C. He was formerly chief chemist in charge of the finishing plant of William E. Hooper & Sons Co., Baltimore, Md.

DELTA
Air Freight
costs less
than you think!

Holds down inventories! Holds down costs of crating, insurance, capital tie-up. Protects against deterioration and market declines!



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Jim Fisher has been promoted to day overseer of weaving at the Marion (N. C.) Manufacturing Co. Replacing him as night overseer is **Creede Isaacs.** * * * **Thermal D. Ross,** formerly weave room overseer, has resigned to accept a position as general overseer of weaving at the Southside plant of Abney Mills.

Kenneth C. Schlegel has been elected president and chief executive officer of Schlegel Manufacturing Co., Rochester, N. Y. The company also named **Donald A. Tesch,** secretary, to the post of assistant treasurer, and **William Sittig, Jr.,** general sales manager. The former president, **Carl F. Schlegel,** has been elevated to the post of vice-chairman of the board. The chairman is **C. P. Schlegel,** father and grandfather of the vice-chairman and president.

Reeves Brothers, Inc., has appointed **Martin H. Gurley, Jr.,** to the newly-created position of new product analyst of the Vulcan Rubber Products division. * * * **Victor L. Erlich** has been elected vice-president and director of basic research and development.

The Lowell (Mass.) Technological Institute has appointed **Marcellin D. Desrosiers** an instructor in the department of textile engineering.

Marstan Braid Co., West Warwick, R. I., has named **Conrad Wilkes** secretary of the company.

Werner Pels has joined the National Cotton Council's Washington, D. C., office as a member of the technical staff of the Council's utilization research division.

The National Institute of Rug Cleaning, Bethesda, Md., has appointed **Robert F. Coleman** managing director, succeeding **Richard M. Powell,** who has resigned.

Chatham Manufacturing Co. has appointed **Fred C. Page, Jr.,** superintendent in charge of the fibers division. His former responsibilities over wool, blending, scouring, and waste were assumed by **Hubert Parker,** who also supervises raw stock dyeing.

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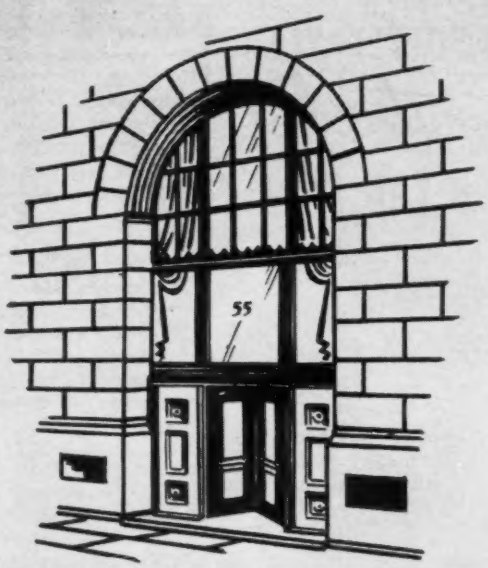

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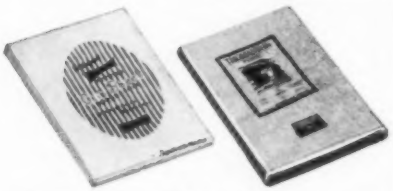

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Personal NOTES ABOUT MEN YOU KNOW

Johnny D. McDonald has been named assistant to the superintendent of the White Oak plant of Cone Mills Corp., Greensboro, N. C. He is responsible for the plant's third shift operations. **Wallace E. Brown** has been promoted to waste control supervisor, the position formerly held by Mr. McDonald. **Richard C. Spivey** has been transferred to the manufacturing by-products department. * * * **Charles E. Kerchner,** superintendent of power for Cone

Mr. Kerchner (right) on the job.

Mills Corp., is one of 18 power engineers featured in a 28-page brochure recently published by *Power Engineering.* He was chosen to represent all power engineers in the textile industry.

Irving Worsted Co., Chester, Pa., has named **David Arthur** to the new post of general manager. He was also elected a director.

James C. Barbre has been named assistant plant manager of the A. & M. Karagheusian, Inc., Albany, Ga., division.

Kayser-Roth Corp. has named **Alfred P. Slaner** to the post of executive vice-president. * * * **Charles A. Kaufman** has been elected vice-president and general manager of Kayser-Roth's Schiaparelli division. At the same time, **Morris L. Judson** was elected vice-president in charge of the Mojud division, and **Arnold M. Raphael** was chosen vice-president and general manager in charge of the Esquire division.

Bruce Jackson has resigned as general manager of the Stead & Miller division of Collins & Aikman, Concord, N. C.

OBITUARIES

Edward Moseley Abbot, retired executive of Abbot Worsted Co., Westford, Mass.

Albert M. Banker, 90, founder of Gloversville (N. Y.) Silk Mills, Cherry Valley, N. Y.

Thomas Leo Cotter, assistant sales manager of Universal Winding Co., Matunuck, R. I.

Ira Watson Dixon, 58, president and treasurer of Kirkman-Dixon Machinery Co., Greenwood, S. C.

Alexander M. Fairley, Jr., 62, cotton yarn broker for Waverly Mills, Inc., and Long Shoals Mills, Charlotte, N. C.

C. F. Foster, 81, hosiery manufacturer, Burlington, N. C.

Everson A. Hager, 87, founder of former Royal Knitting Co., Johnstown, N. Y.

Thomas C. Hardman, 88, vice-president of Harmony Grove Mills, Commerce, Ga.

Clarence Jolly, Sr., 56, retired superintendent of Edna plant, Cone Mills Corp., Reidsville, N. C.

Samuel J. Kobe, 56, president of Samuel J. Kobe Corp. and Kobe-Warp Fabrics, Inc., New York, N. Y.

Alfred C. Lehm, 73, retired manager of the Lebanon plant of No-Mend Hosiery, Inc., Philadelphia, Pa.

George B. McCallum, 83, retired treasurer of Forstmann Woolen Co., Nutley, N. J.

Alfred Marum, 81, head of Marum Knitting Mills, Lawrence, Mass.

James W. Miller, 73, retired superintendent of spinning for Perfection Spinning Co., Belmont, N. C.

Howell T. Newton, 74, president of Trio Manufacturing Co., Forsyth, Ga.

Josephus Daniels Pell, 59, president of Angle Silk Mills, Rocky Mount, Va.

Robert O. Perkins, 50, retired member of Avondale Mills organization, Rockford, Ala.

Charles J. Ploch, 68, retired knit goods manufacturer, Point Pleasant, N. J.

William Polansky, 66, president of Youthcraft Knitting Co., Inc., Brooklyn, N. Y.

Sydney Rosenthal, 43, co-owner of Geneva Fabrics, Inc., Paterson, N. J.

Stephen S. Sehl, 68, secretary and co-manager of C. A. Wanner, Inc., Fleetwood, Pa.

Harry Roberts Stephenson, 69, retired president of Southern Bleachery, Greenville, S. C.

E. V. Trammell, 58, supervisor of weaving at Piedmont Manufacturing Co., Piedmont, S. C.

Joseph E. Walworth, 86, partner in former Walworth Bros. textile mill, Lawrence, Mass.

What the TEXTILE MILLS are doing

Vel-Cord Southern Corp. has begun operations at Lumberton, N. C. The first Southern unit of **Vel-Cord Corp.,** Fall River, Mass., the firm is currently confining its operations to finishing corduroy, but plans to add finishing of synthetic products in the future.

Wamsutta Mills, a subsidiary of M. Loweinstein & Sons, Inc., will discontinue operations at its New Bedford, Mass., weaving and sheet manufacturing plant the latter part of the year. Production will be continued and expanded at affiliated plants in the South that have been manufacturing Wamsutta products.

According to figures released by the Cotton Manufacturers Association of Georgia, 27 Georgia textile plants operated during the first six months of 1958 with no disabling injuries or lost time accidents. They are as follows: **Ames Textile Corp.,** Cleveland; **General Tire & Rubber Co.,** Aldora Mills div., Barnesville; **Jefferson Mills, Inc.,** Plant No. 2 at Crawford, and finishing plant, Jefferson; **Candlewick Yarn Mills,** Royston; **Chicopee Mfg. Corp.,** Lumite division at Buford and Cornelia, and the plant in Athens; **Bibb Mfg. Co.,** Crown and Star plants, Macon, and Taylor mill Reynolds; **Lavonia Mfg. Co.,** Lavonia; **Mt. Vernon Mills, Inc.,** plant No. 1, Newnan; **J. P. Stevens & Co., Inc.,** Nathaniel plant, Dublin; **Clarkesville Mills,** Clarkesville; **Pepperton Cotton Mills,** Jackson; **Dundee Mills, Inc.,** plants No. 2, 3, and 5, Griffin; **Coats & Clark, Inc.,** Pelham; **Imperial Cotton Mill,** Eatonton; **Thomaston Mills,** Griffin; **Riegel Textile Corp.,** dyeing and finishing plant, Trion; **Callaway Mills Co.,** Unity plant, LaGrange; **Swift Spinning Mills, Inc.,** Columbus; **U. S. Rubber Co.,** Stark mill, Hogansville; and **Columbus Mfg. Co.,** Columbus.

York Knitting Mills, Ltd., is transferring its Zimmerknit underwear operation from Hamilton to Woodstock, Ont., Canada, where all finishing operations will be consolidated. The move will be made gradually during the next several months.

A total of 670 mill-owned houses is being offered for sale by **Clinton and Lydia Cotton Mills,** Clinton, S. C. They will be offered first to the occupants. A few of the houses in the two communities will be moved to new locations and will be offered for sale after relocation.

Continental Mills, Inc., Philadelphia, Pa., has announced plans to sell its plant and to revamp its manufacturing operations for greater flexibility. The company's yarns and fabrics are to be produced in other mills, the report stated, while purchasing and blending of raw materials, finishing, and merchandising are to be continued by Continental at a new location in Philadelphia.

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Fugitive Tints (Rinse Free Colors)
Softeners, Waxes, Lubricants, Plasticizers, Gelatines, Penetrants, Soluble Crayons

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GUMS and THICKENERS
Water Soluble (Polygum 220, 221, 225, 230, 260)
Prepared Type (Polyprint SM, 500)
Emulsion Base Thickeners for all dyestuffs

FINISHING

SOFTENERS
Cations (Polysoftener 200, 250, 800)
Anions (Polysoftener 75, 346, 1525, 1610)
Non-ionic (Polysoftener 100)
Sewing Lubricant A554

PLASTICIZERS

Polyflex 120, 910
Polylube P (Polyethylene Emulsion)

RESINS

Water Soluble (Polybond 20, 60, 90, BF)
Thermo Plastic (Polyvin Series)
Thermo Setting (Polyresin FS [cyclic urea formaldehyde] Polyresin A850)

WATER REPELLANTS

Polyropel WT, CB

PIGMENT COLORS*

Imprint: Resinated Concentrates for Water System Printing
Impad: Concentrates for Pad Dyeing.
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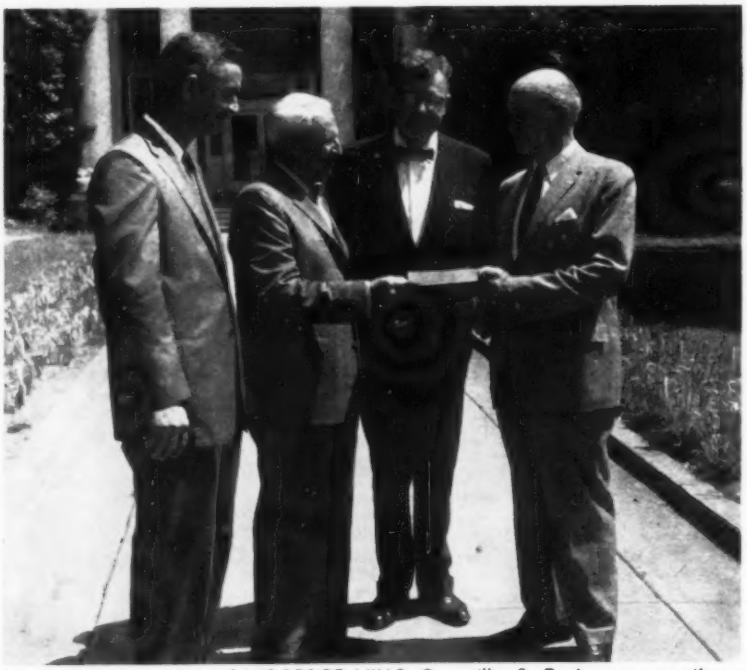
What the TEXTILE MILLS are doing

Renfrew Bleachery, Travelers Rest, S. C., has completed two extensions to its plant, according to an announcement from Daniel Construction Co. A two-story cloth room has been added at one end and at the opposite end an extension to the bleachery has been completed. The latter extension has a basement of approximately half the area containing new bleach tanks, etc. Provisions have also been made for the anticipated addition of a new 60,000 lb per hr steam boiler to serve the process needs of the plant.

Vanetta Mills is reported to be making a corduroy fabric which consists of 65 per cent Dacron and 35 per cent cotton. It is said to be completely wash-and-wear, with no ironing required. At present, Vanetta is producing the goods in seven colors.

Charles J. Webb Sons Co., Philadelphia, Pa., has acquired all the outstanding stock of **Hampton Looms of Virginia, Inc.,** Bedford, Va., and will operate it as a division of Webb. There will be no change in the management policies.

As a further step in a continuing modernization program, the boiler at the Haynsworth plant of **Woodside Mills,** Anderson, S. C., has been converted to gas.



W. H. Beattie, president of WOODSIDE MILLS, Greenville, S. C., is seen presenting a $1,000 Woodside Foundation check to Dr. Thomas Gaines, campaign chairman for the current expansion program of Anderson College. Looking on are Haynesworth superintendent T. B. Phillips and college president John E. Rouse. In line with its policy to aid and encourage educational facilities in the state, Woodside makes an annual contribution to the South Carolina Foundation of Independent Colleges.

The **Lebanon (Tenn.) Woolen Mills** recently celebrated its 50th anniversary by holding open house and inviting the public to a program celebrating the event. The day was climaxed by a picnic and square dance for company employees.

The **William G. Leininger Knitting Co.,** Mohnton, Pa., has started construction on a new building to provide additional facilities for finishing misses' and men's socks. The building will be completed by the end of the year.

Hanes Hosiery Mills Co., Winston-Salem, N. C., has developed an exclusive method of applying a hand-printed clock design to sheer seamless stockings. A very fine pointed brush and a special hand printing method are utilized. Special color-fast dyes are used for the designs which are guaranteed wash-proof for the life of the stocking.

The Kendall Co. will use the recently purchased Abbot Worsted Co. plant in Seneca, S. C., for the manufacture of elastic goods. Part of the

production currently handled by the firm's Rockford and Chicago, Ill., and the South Bend, Ind., plants will be transferred to the new facility in the near future. This is said to be a step in a long-range program to improve efficiency and economy through consolidation and streamlining of production.

The Rodgers Hosiery Co., Athens, Ga., was given a special salute by the local Chamber of Commerce recently. The plant employs about 200 people.

The first step in a giant weaveroom modernization program has been completed by **Russell Manufacturing Co.,** Alexander City, Ala., with the installation of the last of 396 E-Model looms that were widened to 50 inches and re-worked in their entirety, including provision for use of an automatic drawing-in machine. "Unit" fluorescent lighting has been replaced with stronger "continuous strip" lighting; new motors, switches, and power supply lines have been installed; floors refinished; the room re-painted; and an improved humidity system installed. A new air-conditioned drawing-in room has been constructed and automatic drawing-in equipment provided.

A building to house the manufacturing facilities and general offices of **Southern Laces, Inc.,** a subsidiary of **Mozur Laces, Inc.,** is scheduled for completion by the end of the year in Wilmington, N. C. Initial employment is expected to consist of 300 to 400 persons.

Standard Knitting Mills, Inc., Knoxville, Tenn., has made an addition to its fourth floor. The new addition is expected to result in increased efficiency in the knitting department but probably no increase in production.

Swan Dyeing & Finishing Corp. has begun operations in Swansea, Mass. The new company has purchased the former Swansea Print Works plant and will specialize in the finishing of linings, especially fabrics of man-made fibers. Equipment is reported to provide a capacity of 125,000 to 150,000 yards a day. President of the firm is Ralph Guerriero, formerly of E & W Piece Dye Works. Treasurer is James Gould, formerly of Bristol Finishing Co.

Swift Manufacturing Co., Columbus, Ga., is sponsoring, for the third consecutive year, a teen-age business enterprise operated as a part of the local Junior Achievement program. Advisors are Julian Reynolds of the company's cost department, Will Ward of the payroll department, and George Welch of the standards department, said Paul McKenney, Jr., vice-president, in a recent issue of *The Swift*, employee publication.

Aileen Mills Co., Biscoe, N. C., has initiated an expansion program which will provide 36,000 sq ft of additional space. Plans call for the rearrangement of all processing and an approximate 40 per cent addition to weaving capacity. Approximately 40 looms will be added from equipment already available to the company.

The Pepperell Manufacturing Co. is marketing no-iron sheets that are machine washable and can be tumble dried. They are said to be odor-free and are unaffected by any type of bleach. * * * Pepperell has added a two-color foulard print to its line and reports that it is equipped to make up any pattern customers may

financing available

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order. In addition, there are several open patterns which can be printed on any Pepperell synthetic fabric. Other recent additions are taffetas and twills with either gold or silver metallic yarn. * * * A new Pepperell fabric for work gloves is called "Tuff-Dot S/41-224." The new small plastic dot flannel is designed to give work gloves a highly desirably "tacky" grip; also, it provides a great deal of porosity so that wearers' hands do not perspire as they would in a leather or rubber glove.

The Blacksburg, S. C., plant of **Dodgeville Finishing Co., Inc.,** which was closed in October of 1957, is again in operation, dyeing and finishing synthetic curtain marquisettes.

Palmetto Yarn Mills, Pageland, S. C., has been sold to interests affiliated with the Textile Banking Co. and is being operated as **Palmetto Yarn Mills, Inc.**

The technical library in the Research and Development division of CALLAWAY MILLS CO., LaGrange, Ga., has been enlarged and redecorated. The new area provides additional space for shelving, files, card catalogs, and several tables and chairs.

Sale of synthetic yarns has been discontinued by **Durham (N. C.) Hosiery Mills** and plans made to dispose of the firm's spinning equipment. All hosiery operations will continue with no changes contemplated.

The Eaton Knitting Co., Ltd., Hamilton, Ont., Canada, has ceased operations.

Fieldcrest Mills, Inc., has acquired the **Nye-Wait Co., Inc.,** Auburn, N. Y., a woolen system carpet mill. It will be operated as a wholly-owned subsidiary of Fieldcrest. Sales will be handled by Karastan Rug Mills, a division of Fieldcrest. Otherwise, no changes in sales or distribution policies are in view.

A line of split glass cloth tapes in widths up to 12 inches has been developed by **Flightex Fabrics, Inc.,** New York City. The new tape, said to be compatible with all present molding resins, has applications in the chemical, boating, and other low pressure molding industries where added structural strength is needed.

Great Falls Bleachery & Dye Works, Inc., Somersworth, N. H., has acquired a continuous bleaching range from **Paramount Printing & Finishing Co.** Purchased as part of a modernization and expansion program, the new equipment will be in production by the first of the year. The company expects to continue the use of kiers for bleaching, as well as the continuous system.

The 525 employees of the Carter-South Boston, Va., plant of **J. P. Stevens & Co., Inc.,** recently received a plaque for operating 4,000,000 manhours without a lost time accident. The plant has operated since February 7, 1955, without a disabling accident. Robert T. Stevens, president of the company, received the plaque from Bryan

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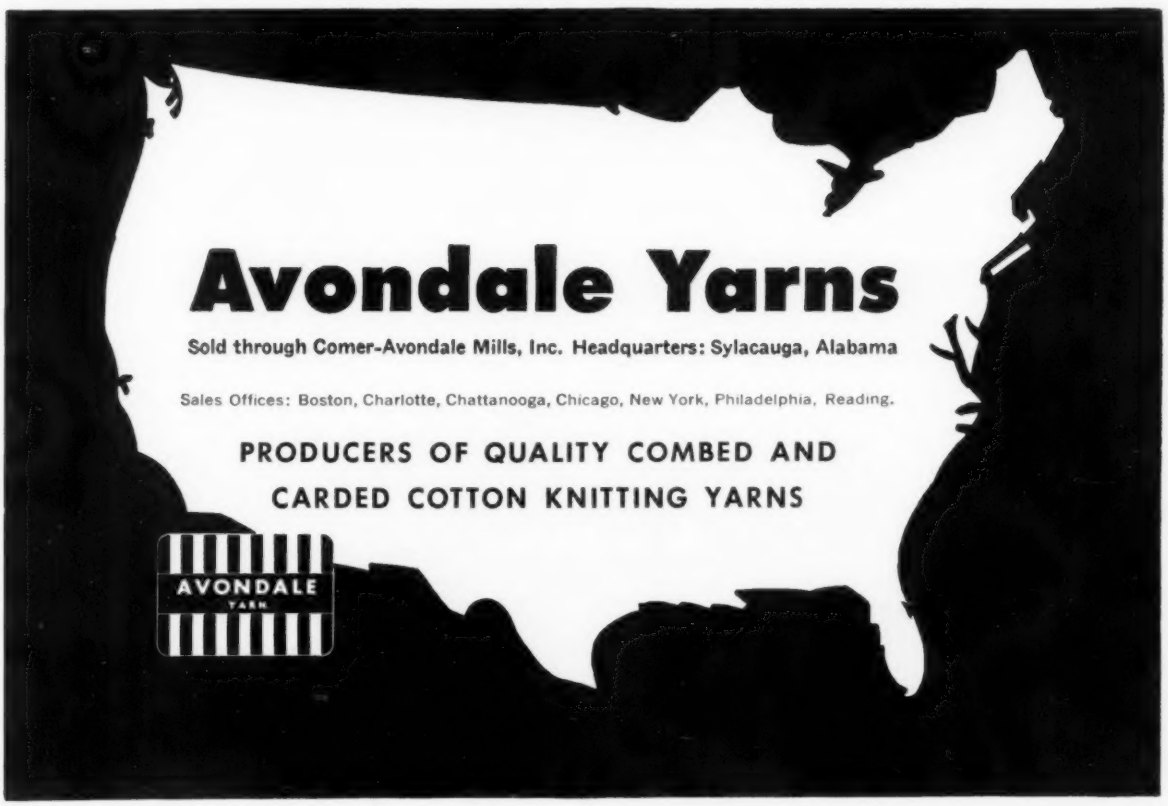
Smith, president of Liberty Mutual Insurance Co., and in turn presented it to J. A. Patterson, plant superintendent, who accepted the award on behalf of the employees. "Employees of our South Boston plant have every reason to be proud of their great safety record," said Milton Southerland, manager of the plant, who served as master of ceremonies on the occasion. "The record clearly shows South Boston is the leader in safety for our company. During the last ten years the company average frequency of disabling injuries was less than six per million manhours. South Boston's frequency has been less than three per million manhours."

Construction has begun on a 22,000 sq ft addition for **Central Yarn & Dyeing Co., Inc.,** Gastonia, N. C. This is the initial step in a long-range expansion and modernization program, expected to cost about $250,000, for processing all types of cotton and synthetic yarns.

Almost $1 million worth of electronic data processing equipment was recently put into operation at **Dan River Mills, Inc.,** Danville, Va. Said to be the largest installation to date in the textile industry, the computer system compiles in a matter of minutes information which formerly required hours of time. According to J. W. Vanderwerff, company controller, programs have already been developed for using the system to provide statistical data in the areas of production, inventory, supply control, payrolls, and other related accounting functions; also, the New York sales headquarters will receive current information on the progress of fabric orders in production, finished goods available for sale, and projections as to styles and patterns available at later specified dates.

Dan River's electronic data processing center at company headquarters.

* * * An addition to Dan River's Danville, Va., finishing plant has been completed. The building houses the wide machinery needed in the production of "Wrinkl-Shed With Dri-Don" sheets and pillow cases.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SUPPLIERS News

WHAT THEY ARE DOING

Joe R. Whitehurst has been appointed general sales manager of **Ideal Industries, Inc.,** and **Ideal Machine Shops, Inc.** C. Jack Costner has been named production manager to fill the position previously held by Mr. Whitehurst.

Mr. Whitehurst
Ideal Industries

Mr. Rounds
Industrial Rayon

Industrial Rayon Corp. has appointed George I. Rounds to the position of vice-president in charge of marketing. His headquarters will be at the company's general offices.

The former photoengraving department of The Apponaug Finishing Co. has been incorporated as a new company, designated **Apponaug Roto-Graving Co.** Located in Apponaug, R. I., the new firm has no affiliation with any printing company, but is engaged in the production of engraved copper rolls or cylinders for printers of textiles, plastics, etc., specializing in photoengraved reproductions of continuous tone and continuous repeat color separation designs.

General Precision Equipment Corp. has announced a change in name of a major subsidiary and an expansion of its products and services. **GPE Controls, Inc.,** is the new name of the former **Askania Regulator Co.**

Leon Seidel, technical sales representative for Lurex metallic yarn, has been transferred to headquarters of the newly-consolidated Zefran and Lurex sales group at the Williamsburg, Va., plant of **The Dow Chemical Co.**

The former **Pawtucket Spinning Ring Co.** has completed its move to Greenville, S. C. The name has been changed to **Saco-Lowell Shops,** Spinning Ring division. Herbert B. Birtwistle has moved to Greenville from Central Falls, R. I., and will continue his supervision of the division. * * * A new operating structure has been announced for Saco-Lowell, keystone of which is the eventual decentralization of the five segments of the business into five divisions. These are: Textile Machinery division, Easley, S. C., under the direction of E. J. McVey, vice-president and assistant general manager; Replacement Parts division, located at the White Horse Road depot in Greenville, S. C., under A. L. Landau, assistant general manager; Gear and Machine division, Saco, Me., under J. A. Kiely, vice-president and assistant general manager; International division, Boston, Mass., under W. F. Lowell, Jr., assistant general manager.

Hans F. Koehler has been appointed territorial sales engineer for **Fidelity Machine Co.** He will handle sales and service in the Pennsylvania, New Jersey, Delaware, and Maryland areas.

Mr. Koehler
Fidelity Machine

Mr. Horton
Carter Traveler

W. T. (Bill) Horton has accepted a position as sales engineer with **Carter Traveler Co.** His territory is that which was formerly served by W. Lamar Rankin, who has retired. Mr. Horton was previously with Victor Ring Traveler Co.

Southern Airways Co. has formed a wholly owned subsidiary to be distributors of Beechcraft airplanes for the state of Florida, with Arthur W. Templeton as vice-president and general manager.

Mr. Bradshaw

Mr. Carroll
Roberts Co.

Mr. Peacock
Roberts Co.

Mr. Hart
Ciba Co.

To expand its sales and technical services to the textile industry, **Roberts Co.** has appointed Meigs C. Golden to the position of assistant sales manager. R. Frank Walker, who has been on special assignment as general manager of Starkville (Miss.) Mills, Inc., has returned to Roberts to handle sales in South Georgia and Alabama. His headquarters are in Columbus, Ga. Meade O. Bradshaw is the firm's representative in North Georgia, Alabama, and Western Tennessee. He makes his headquarters in Athens, Ga. Robert L. Carroll has been named sales engineer with headquarters in Greenville, S. C.; in addition to serving textile mills in the area, he is responsible for the firm's expanding technical efforts on equipment for the primary synthetic fiber producers. William A. J. Peacock, recently company representative in South Georgia and Alabama, is handling the Virginia and Eastern Carolina territory.

B. F. Goodrich Chemical Co. has completed a $3-million plant in Calvert City, Ky., which will be used in the production of a water-soluble polymer called Carbopol. One of the potential uses of the product is in textile printing inks.

Scott & Williams, Inc., has announced the formation of **A M S L Corporation** for the purpose of licensing on a royalty basis domestic and foreign hosiery and outerwear manufacturers to use a recently developed attachment for looping machines which is said to increase production of the machine to its full capacity, prevent runs from the looping line, and eliminate the necessity for long training to obtain competent looper operators. [For details of this development, refer to the Knitting Section of this issue.] Scott & Williams will manufacture the attachment for sale to the licensees. A M S L (stands for Automatic Micro Safety Looping) Corp., organized under the laws of North Carolina and with offices in High Point, N. C., and Laconia, N. H., initially will offer licenses on men's, women's, children's, and infants' hosiery. Officers of the new firm are: president, Dr. R. H. Whitehead; vice-president, W. O. McMillan; secretary, F. H. Hallenbeck.

Ernest H. Hart has been appointed to the chemical specialties department of **Ciba Co., Inc.**

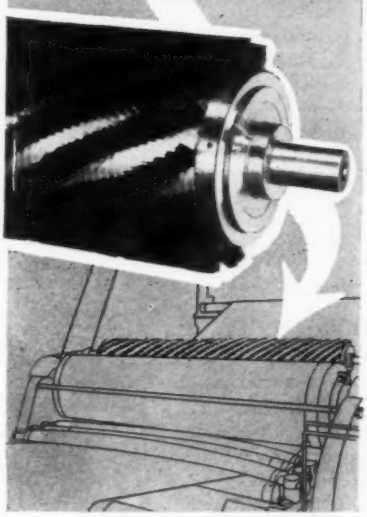
A new plant for the polymerization of polyvinyl acetate emulsions has been established in England by **National Starch Products, Inc.** Operated by National's subsidiary, National Adhesives, Ltd., the plant is expected to encourage the free exchange of new developments in the field between the company's British technologists and research and development personnel in the United States. * * * Frank Greenwall has been elected chairman of the board of National Starch Products. Other executive appointments were Don D. Pascas, president and chief administrative officer; James Dillon, senior vice-president; and Robert W. Merritt, vice-president of manufacturing, was elected to a directorate.

James F. Marshall has retired from the sales department of **Whitin Machine Works** after 58 years with the company. Since 1923 he has been in close contact with mills in the eastern U. S. and Canada. * * * J. Lawrence Orr has been promoted to the position of southern agent in the Whitin sales office, Charlotte, N. C. He replaces R. I. Dalton, Jr., who has been transferred to the company's main sales office in Whitinsville, Mass.

Paul R. Parrette has been named manager of the newly-established trade relations division of **Procter & Gamble.** The division will devote its principal efforts to developing ways in which the firm can be of greater service to the trade.

Textile Research and Development Corp. is setting up laboratories with fabric testing equipment and all types of home and commercial laun-

WHY JENKINS' METLKOR® BRUSHES are on JAMES HUNTER SQUEEZE ROLLS



A JAMES HUNTER SQUEEZE ROLL WITH JENKINS' METLKOR BRUSH

James Hunter Machine Co., North Adams, Mass., wanted a brush to stand up when removing acidified flock from their Carbonizer Squeeze Rolls. Jenkins' engineers designed a METLKOR brush with exposed metal parts of stainless steel and bristle of acid-resistant Nylon.

Mr. Frank B. Morrill, Chief Engineer, James Hunter Machine Co., says: ". . . we have been using Jenkins' brushes for flock removal on our Squeeze Rolls for years . . . they do a much better cleaning job than the brush previously used, and stand up several times longer . . ."

This top textile machinery manufacturer has proven the efficiency of Jenkins' METLKOR — the cylinder brush that lasts many times longer and can be re-bristled! If you have any standard or special brush problem, write us today.

Specify Jenkins' METLKOR
the original . . . the best Metal-Core Brush

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CYLINDER BRUSHES
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SUPPLIERS News
WHAT THEY ARE DOING

dry machines near Oteen, N. C. President George Fine stated that wash-and-wear evaluation of fabrics and garments and research and product development for chemical manufacturers will be principal services offered.

Midland-Ross Corp. has named E. F. March to the newly-created position of vice-president-finance. C. W. Elliott has been appointed vice-president-administrative and given additional executive responsibilities over the Ross Engineering division, Ross Engineering of Canada, Ltd., and the John Waldron Corp. At the same time, Saxton W. Fletcher was elected vice-chairman of the board.

Harry C. Jackson, president of **Morton Machine Works,** has announced that J. R. Angel no longer represents the firm. Sales for the North and South Carolina territories will be handled from the company's office to be located in the Charlotte, N. C., area.

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There are many, many reasons and causes for machine failure presenting the costly problem of "Down-time". Some of these every day problems are unforeseen - - - BUT

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BREAKING
of your . . .
SPOOLS AND BOBBINS

TEXTILE SHIELD CO., INC.
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John W. Bamert has been appointed general sales manager of Stanley Hardware, division of **The Stanley Works.** He is responsible for builders hardware, Magic Door, and industrial sales.

Coleman C. Yeaw has assumed his duties as technical representative in the Newark district of Union Carbide Chemical Co., division of **Union Carbide Corp.**

Emanuel P. Lewis has been elected president and a member of the board of directors of **Shapiro Bros. Factors Corp.** Joseph Shapiro was elected chairman of the board.

Ex-Cell-O Corp. is reported to have purchased a West German loom building firm known as Werkzeng-maschinenfabrik Geoppingen, G.m.b.-H. It will operate as an independent subsidiary.

The H. E. Crawford Mill Supply Co., High Point, N. C., has been appointed sales representatives for the Schieren Chro-Lon line of leather-nylon belting, according to an announcement by the **Charles A. Schieren Co.**

Cobble Brothers Machinery Co., Inc., has announced the purchase of **Super Tufter Machinery Co., Inc.,** Fort Oglethorpe, Ga. The two companies will continue to operate as separate firms. J. A. Cobble, Jr., will remain as vice-president and general manager of Super Tufter.

Armand L. Greenhall has accepted an appointment to the laboratory staff of **Polymer Industries, Inc.,** Textile Chemicals division. He will be engaged in product development. John M. Hennessey, Jr., has been appointed a technical advisor in field service.

W. W. Seward has been elected vice-president of **General Latex & Chemical Corp.** (of Ga.). He retains his position as general manager. * * * General Latex has acquired a portion of the Stein, Hall & Co., Inc., Long Island City latex compounding equipment.

Wallerstein Co., Inc., has acquired a British affiliate, **Wheeler & Huisking, Ltd.** The purchase of the firm is in line with Wallerstein's decision to expand overseas operations.

For the convenience of southern and other out-of-town textile executives doing business in New York City, **Werner Textile Consultants** has moved to 1430 Broadway. The move was prompted by the emergence of the midtown area south of Times Square as the hub of the nation's textile business.

Mr. Hennessey
Polymer Industries

Mr. Brown
Nat'l Vulc. Fibre

William H. Brown has been named manager of the newly-formed marketing department of **National Vulcanized Fibre Co.**

The **J. M. Nash Co.** has purchased the **Canvas Products Corp.** as another move in its policy of expansion through diversification.

E. F. Houghton & Co. has purchased property in Carrollton, Ga., as the site for its first branch operation in the southeast.

The relocation of major units of their technical service laboratories has been announced by **Arnold, Hoffman & Co., Inc.** All southern plants will be accommodated by the Southern Area Laboratory at Charlotte, N. C., where recent expansion provides facilities for handling continuous dyeing processes, textile printing, and resin and non-resin finishing, in addition to routine services. Northern plants will be serviced by greatly enlarged laboratory facilities at Providence, R. I.

Louis P. Batson Co., Greenville, S. C., has been appointed sole U. S. agent for William Tatham, Ltd., manufacturers of woolen carding machinery, machinery for the manufacture of non-woven textiles, and various other yarn processing machinery.

The Boiler Equipment Service Co., representing **Cochrane Corp.,** has moved to 1079 Alco St., N. E., Atlanta, Ga. The move was made to provide more space and better facilities.

Mayor Kenneth Cass, Greenville, S. C., officiated at a ribbon-cutting ceremony at the recent formal opening of the new research and sales distribution center of **Hilton-Davis Chemical Co.**

Mr. Borghetty
General Aniline

Mr. Underwood
Cleveland Crane

Mr. Keever
F. A. Young Mach.

Mr. Pact
Standard Chem.

Mr. Haviland
Willcox & Gibbs

Mr. Connell
Connell Machinery

Hector C. Borghetty has been appointed general manager of foreign operations for **General Aniline & Film Corp.** At the same time, Gerard E. Neisser was named Latin American regional manager. He will retain his present function as export-import manager of dyestuffs. * * * Major changes in the marketing organization of the Dyestuff & Chemical division feature appointment of six additional product line managers. They are: J. R. Bonnar, sales manager of General Dyestuff Co.; J. M. Cloney, sales manager of Antara Chemicals; C. M. Knowles, technical manager; R. J. Hamilton, advertising manager; C. E. Stevens, manager, sales development; J. T. Robinson, manager, sales administration.

Howard S. Bean has been retained as consultant on flow measurement by **The Foxboro Co.** He was formerly with the National Bureau of Standards.

George M. Seib has been appointed vice-president of **Oakite Products, Inc.** Erwin H. Steif has been promoted to Mr. Seib's former post of secretary.

Albert F. Garrou, president and chairman of the board of Alba Hosiery Mills, Inc., his son, Louis W. Garrou, and George W. Williams, Jr., have filed application for a corporate charter for **Pilot Research Corp.** To be located in Valdese, N. C., the firm will acquire, own, and develop patents in the knitting industry.

William P. Hanks has been appointed midwest district manager and Robert M. Underwood, northeast district manager of the Cleveland Tramrail division of the **Cleveland Crane & Engineering Co.**

Arthur E. Hirst has retired as New England sales representative of **Standard Chemical Products, Inc.,** after 18 years. He is succeeded by Harry H. Pact.

According to the **F. A. Young Machine Co.,** Willingham Cotton Mills, Macon, Ga., has ordered NYAF changeovers for 21 spinning frames. * * * Bayne Keever has joined the company as engineer; he was formerly with Roberts Co.

Charles Haviland, Jr., has been appointed sales manager in charge of field operations by **The Willcox & Gibbs Sewing Machine Co.**

Fred L. Connell has resigned from his position as assistant manager of Crescent Corp. in order to establish his own textile machinery business. The new firm is known as the **Connell Machinery Co.** and is located in Spartanburg, S. C. The firm buys and sells textile machinery and supplies and handles the appraisal and liquidation of textile mill properties.

Appleton Machine Co. is celebrating its 75th anniversary with a program of special events and promotional activities which will continue through June, 1959. Theme of the diamond jubilee celebration is "75 Years of Progress Through Specialization."

Plans to build a multi-million-dollar, campus-style research center near Painesville, O., have been announced by **Diamond Alkali Co.**

Halsey Taylor® **offers a wide variety of newly styled health-safe coolers**

EXPLOSION-PROOF model for use where continuous temperatures exceed 110°

COMBINATION High and Low-Level for use of children and adults

STAINLESS STEEL Cabinets to fit any modern decor

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You'll find Halsey Taylor coolers just right for commercial or industrial applications. They are available in air-cooled or water-cooled models, with sturdy life-time cabinets and sanitary two-stream projectors. Write for catalog or see Sweet's.

The Halsey W. Taylor Co., Warren, Ohio

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SUPPLIERS News
WHAT THEY ARE DOING

Dawbarn Brothers, Inc., has opened a sales office in Montclair, N. J. In charge of new product development is N. H. Sherman and M. Jack Rinehart, Jr., is sales representative. The firm has also appointed a sales representative to serve the southern states. He is Glenn M. Litsinger, who is located in Hickory, N. C.

Eastman Chemical Products, Inc., has announced a new dye service plan designed to aid dyers, converters, and manufacturers in establishing and maintaining positive standards of color fastness for the piece-dyed acetate fabrics they handle.

Key to the plan, called the Eastman Plan for Specification Dyeing, is a comprehensive testing service to be carried out at the company's dye service laboratories in Lodi, N. J., and Kingsport, Tenn. Under the plan, converters and manufacturers are encouraged to specify the precise degree of color fastness required for their particular markets.

To achieve the control provided by the plan, the dyer and the converter must first reach an agreement regarding minimum fastness requirements. At this point the dyer arranges with Eastman for the necessary testing service and, as each lot of fabric is dyed, forwards a sample of the fabric to the nearest Eastman dye service laboratory where the specific tests are performed. A complete report is furnished to the dyer or, at the dyer's request, to the converter including test swatches, dye lot numbers, and all other necessary identifying information. This test report becomes the basis for the converter approving shipment of the fabric lot or acknowledging its acceptance. This same evidence, too, becomes a reassurance for the converter's customer who may use it to approve shipment from any specific dye lot.

National Textile Research, Inc., has begun operations in Durham, N. C. The new firm conducts application type research on textiles, coated fabrics, and related items; engages in product design; and serves as a certified test laboratory for textile work.

Clark Equipment Co. has established what is said to be the first facility for dealing in used fork lift trucks on a national scale. The new center, located at the company's New York sales and service branch, will buy, sell, or trade used fork trucks of any type and make. * * * "Materials Handling—Tomorrow's Solutions of Today's Problems" is the theme established for the 1959 Clark Essay Contest which ends April 3, 1959. Offering a first prize of $2000, the contest is open to anyone except Clark employees and dealers.

Stellamcor, Inc., has moved its New York City offices to 10 E. 43rd St. The new telephone number is MUrray Hill 7-8160.

One of Eastman's dye service laboratories for testing and reporting.

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SAXL TENSION METERS
Quick Trigger Action
For Yarns, Wires, Rubber, Cords and Tape
American made and serviced, always accurate
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1—LUMMUS DOUBLE BOX, DOWN-STROKE ALL STEEL PRESS, 27X54" BALE, COMPLETE WITH TRAMPER, HYDRAULIC PUMP, PIPES, VALVES, ETC.

1—ECONOMY MODEL 654 HEAVY DUTY ALL STEEL DOWN PACKING PRESS, SINGLE BOX, 27X54" BALE, MOTOR DRIVEN.

2—KITSON W-3 2-CYLINDER WASTE MACHINES, APRON FEED, APRON DELIVERY, BALL BEARING, MOTOR DRIVEN, EXCELLENT CONDITIONS.

1—MURRY ALL STEEL DOUBLE BOX DOWN PACKING PRESS, 27 X 54" BALE, WITH TRAMPER, HYDRAULIC PUMP, PIPING, CONTROLS, ETC.

2—½-TON YALE ELECTRIC CHAIN HOIST, COMPLETE WITH 400' OF MONORAIL OVERHEAD TRACK.

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EXTRACTOR, AMERICAN PERRY TYPE, 54 INCH DIAMETER, REMOVABLE BASKETS. WRITE BOX 41, TEXTILE INDUSTRIES, 806 Peachtree Street, Atlanta 8, Ga.

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West Point, Georgia

FOR SALE

Bahnson Copper Humiduct Units with Controls, Steam Coils and Humidity Controls. Write Box 43, TEXTILE INDUSTRIES, 806 Peachtree St., N. E. Atlanta 8, Ga.

The Jonesville (Mich.) Paper Tube Corp. has assembled a sample kit which may suggest uses for paper products produced by the firm. Called the "Idea Kit," it includes plain and printed spiral paper tubes, end caps, formed paper plugs to seal openings and protect threads, etc. The kit is available on request.

Formation of a new company to function as exclusive world-wide sales agents for the knitting machine products of **Karl Lieberknecht, Inc.,** has been announced. Known as **Kalio Universal,** the new firm will serve all domestic and international customers. In foreign countries the same agents will continue. Principals of the new firm are C. A. Friedmann, George Groh, John Renger, and Rudy Thierfelder.

According to **Livingston & Haven, Inc.,** the Long lap control system is now being produced in England by **Textile Machinery Makers, Ltd.,** and will be sold by that firm under license in all countries except the United States.

The Boston sales office and warehouse of the **Lunkenheimer Co.** has been moved to 313 Mystic Ave., Medford, Mass. The move was made to provide better facilities for handling of customer requirements.

Harold Marks has joined **James Talcott, Inc.,** as business representative in the New York City office. He will concentrate on soliciting new factoring accounts in the textile field. * * * Joseph A. Amato, vice-president of James Talcott, Inc., has been elected president of Hamilton Factors Corp., a wholly owned subsidiary.

The jointly-operated **Johnson Motor Lines-Atlantic States Motor Lines** has installed an automatic teletypewriter system to provide instantaneous communication between its terminals, sales office, and company headquarters.

Construction of a new polyvinyl alcohol resin plant at Calvert City, Ky., and a supporting pilot plant at Bound Brook, N. J., has been started by **Air Reduction Chemical Co.**

Southern Latex Corp. has been named to sell, distribute, and provide technical service on **Alco Oil & Chemical Corp.** chemicals and thickeners in the southeastern states. Southern will maintain stocks at Austell, Ga., Concord, N. C., and Dalton, Ga.

American Enka Corp. has appointed additional sales and technical representatives to the firm's district offices. In the Greensboro, N. C., office, W. W. Boring has joined the sales staff and H. H. Scheviak has been appointed technical representative. Donald Hoffman has been named a sales representative with headquarters in the New York district sales office, and Douglas Smith has accepted a position as technical representative. Robert Graham has joined the Chattanooga, Tenn., office as sales representative.

Dudley C. Jackson, Birmingham, Ala., has been named exclusive distributor for **Trabon Engineering Corp.** for the states of North and South Carolina, Alabama, Georgia, Tennessee, and most of Mississippi.

Lawrence H. Bruce has been appointed sales manager of latices for the Naugatuck Chemical division, **United States Rubber Co.**

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We have had over fifty years experience furnishing steel for both builders of TEXTILE MACHINES and makers of replacement parts for KNITTING MACHINES.

Modern Slitting and Shearing Equipment

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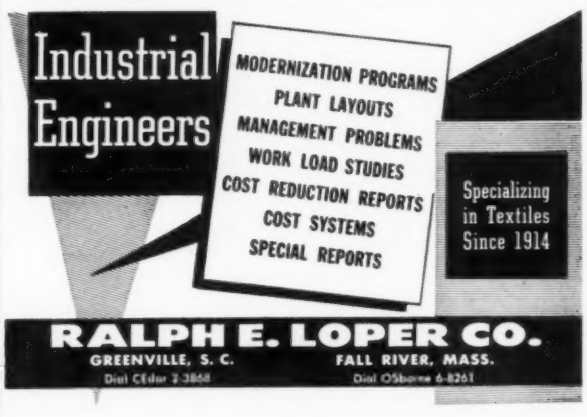

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